Clinical Lecture
ON THE
TEMPERATURE AND CIRCULATION AFTER CRUSHING OF THE CERVICAL SPINAL CORD.

Delivered at the London Hospital on February 11th,

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GENTLEMEN,—My lecture of to-day will concern questions of physiology rather than of practice. Not unfrequently we see conditions produced by injuries which may almost compare in their definiteness with those obtained by experiment, and in many others, although the complications may be greater, yet the lessons are scarcely less instructive. Practical surgery owes a large debt to experimental physiology, and it is our duty, when the opportunity occurs, to put on record such facts as appear to have value. I wish, then, to-day to ask your attention to certain facts as to the influence which injuries to the nervous system exert upon the temperature of the body. We have lately had under observation a man who lived five days after a fracture of the cervical spine, and who, although well clothed in bed, lay the whole of that time as cold as a corpse. I told you at his bedside that this state was most unusual, and that the rule was for injuries to the cord to be followed by paralysis of the bloodvessels, and consequent increase in the temperature of the skin. In this case, however, every part of the surface was cold to the touch, and that, not only at first, when the influence of shock might be supposed to be in action, but up to the time of the man's death on the fifth day. During the greater part of this time the man was not suffering in the least from "shock," nor indeed during the first half of it was his vascular system in any extreme state of depression. He lay with a placid countenance and florid cheeks, and, as nothing in his face suggested any unusual state, great was the astonishment of most who, on applying the hand to his face, found that it was quite cold. Before I ask your consideration of this curious condition, and of the various hypotheses which were offered to explain it, it may be well to adduce a few facts of general bearing as to our knowledge of the subject.

You will find in books considerable discrepancies of statement as to the effects of nerve-section upon temperature, but the following facts may, I think, be taken as fairly well established.

First, the division or injury of a purely *motor* nerve (muscular) does not cause either increase or diminution of temperature. Examples of such conditions are but rarely met with in the practice of surgery, since most of the nerves are double in function which are so placed anatomically as to be liable to injury. We do, however, occasionally see cases of section of the portio dura, or of paralysis from syphilis or other causes of the motor branches only of certain mixed nerves, and general observation, I believe, supports the assertion that in these the temperature of the affected part remains almost normal. If it alters at all, it is in the direction of diminution. Our information as to the result of paralysis of *sensory* nerves alone is very defective. Examples of this condition are yet less frequent than of the nerves of motion. In almost all cases there is room for suspicion that the vaso-motor or some motor twigs are involved as well. Cases, however, do occur in which sensory branches of the fifth, for instance, are paralysed, and in which important observations of temperature might be recorded, but I am not aware that any results have as yet been put on record. Claude Bernard arrived at the conclusion that here, too, as he held to be the case of motor nerves, a loss of temperature resulted, and that the only lesion which produced increase was paralysis of the vaso-motor.

As regards the *vaso-motor* nerve all experimenters agree in stating that its paralysis permits relaxation of bloodvessels, floods the part with blood, and thus, other things being equal, increases the temperature. Almost the only cases in practice concerning which we can assert that the vaso-motor, and it alone, is paralysed, are those in which the injury is to the cervical spine, or the roots of the brachial plexus. In these we get paralysis of the ascending branches of the vaso-motor, without implication of the sensory nerves, and the state of the cheek and ear may be tested in order to ascertain the result as regards temperature. Now and then in spinal lesions, and always in the peculiar injuries in which the brachial plexus is torn across, only one side is affected, and thus contrast is practicable. I have seen several such cases, and I believe that in all, in the early stages—i.e., for a week or two after the accident,—the temperature is increased. I have to add, however, a somewhat unexpected, and I believe hitherto overlooked fact, that the increase is only temporary, and that after a while, instead of increase, there is actual coolness. At what precise period the change takes place I do not know. In the *Ophthalmic Journal* (vol. v., p. 140) I have published the case of a man named Sexty, whose brachial plexus had been torn across, and who most certainly had paralysis of his cervical sympathetic. In him, five months after the accident, the ear of the affected side was always decidedly *colder* than the other. This curious fact is of much importance, and may perhaps help us to explain certain not very rare cases in which, in apparently healthy persons, slight differences in the temperature of limbs are constantly observed. I had never seen this man in the early stages, but probably then he conformed to the rule, and had a hot ear on the paralysed side.

Here let me observe that in all cases of this kind it is essential to take cognisance of the *stage of the paralysis*. In very few of the statements which I find in books is any attention paid to this point. It is, I am sure, very far from being the fact that similar deviations from the normal standard of temperature are observed at all stages of similar lesions. On the contrary, I suspect that there is almost always a tendency to change, and that sooner or later after almost all nerve lesions, whether mixed, sensory, motor, or vaso-motor, a low temperature eventually results. In some the period during which it is higher than normal may be of considerable length, some weeks or months, but in most I believe it is quite short. In the earliest stages other variations may be observed; thus there may be coldness at first, due perhaps to shock, then increased heat, and then again coldness as the final condition.

It may be well now to ask the question as to how these alterations in temperature are brought about. We can easily understand the influence of vaso-motor paralysis, and its reverse, the one causing contracted arteries and reducing the supply of blood, the other the opposite. It is far more difficult, however, to explain the influence of either sensory, motor, or mixed nerves. When, for instance, after section of the ulnar nerve, the temperature at a late stage becomes so much altered that several degrees of loss are registered when the thermometer is put in the cleft between the little and ring fingers of the injured hand, we are quite unable to call in to our aid any theories of altered blood-supply. The vaso-motor is uninjured, and the arteries supplying the cooled parts are branches of the same trunk which feeds others which remain warm. We are almost obliged to conjecture that the cell changes to which the temperature of living tissues is due are reduced when the nerve-supply is cut off. I know indeed of no other reasonable explanation of the commonly observed fact that paralysed parts become cold.

I adverted last week, in alluding to another case, to the value of certain special symptoms by which we estimate the paralysis of the vaso-motor, more particularly the state of the pupil and the degree of priapism. I may conveniently reassert now that the pupil is not after this kind of paralysis "contracted," but that it is simply unable to dilate. Thus, when the patient lies with his head in shade, the pupils are as small as if they were exposed to bright light, but no smaller. After crushing of the cord in the neck, the radiating fibres are rarely so completely paralysed but what some degree of action is permitted. Priapism we must re-

gard, under these circumstances, as essentially paralytic and passive. The erectile tissue of the penis is unable to contract, and blood is pumped into it. Whether under certain circumstances some degree of irritation or of reflex excitability may be added I do not know, but I feel sure that in most cases paralysis accounts for the whole. Thus the organ, although turgid, generally remains flexile—never in the state of complete erection which we now and then see in the rare examples of idiopathic priapism. It varies after injuries to the spine with the precise part injured and with the age of the patient. In young persons it is always more marked and lasts longer than in the aged, and I think it is much greater when the crush is of the upper dorsal spine than in the cervical part. Whenever it is present, we may feel sure that vaso-motor paralysis exists; and when it is extreme, the probability is great that the heart's action is vigorous. Moderate degrees may, however, be present whilst the circulation is very feeble, as in the first stage of collapse.

The case to which I have alluded occurred last November. The man lived from the date of his accident, Nov. 23rd, to the afternoon of Saturday, Nov. 28th—a period of five days; and during the whole of this time his surface was to the hand chilly—almost as cold as that of a corpse. Yet his cheeks, lips, and ears were florid; and his penis, during the earlier part of the time at least, was in a state of priapism.

I certainly do not recollect ever to have before seen florid cheeks which were cold to the touch. This loss of temperature, I must admit, was greater as indicated by the hand applied to the skin than proved by the thermometer; for the latter, when introduced into his rectum, never registered lower than 95°, and in the urethra 93°. The following is a brief statement of his case as collated from the notes furnished by my able house-surgeon, Mr. Williamson.

The patient was a bricklayer, aged twenty-eight, who, on the day before his admission, had fallen from a ladder a height of twenty-two feet, striking his back against some scaffolding. The men who took him up did not think he was much hurt; but he was found to be quite unable to use his legs. We may infer from their account that there was no unusual degree of collapse at the time. When admitted, twenty-four hours after the accident, he was perfectly sensible, and gave a clear account of his symptoms. He was paralysed to the height of an inch above the nipple line. In his arms he retained only the use of the biceps (musculo-cutaneous nerve). His respiration was diaphragmatic, the abdomen rising when the chest fell. He had well-marked priapism, and his bladder was distended. His surface was cold to the touch in all parts, but not so chilly as it became subsequently. The thermometer introduced into the urethra, the penis being in a state of priapism, registered only 93°, whilst one in the rectum at the same time was 95·8°. Thus you will see that the complete paralysis of the sympathetic, as evidenced by the priapism, whilst permitting the distension of the part with blood, did not of itself cause increase of temperature, being no doubt more than counteracted by some other influence. Both pupils were small, although he was lying in the shade; they contracted a little on exposure to bright light. Dr. Hughlings Jackson examined his eyes with the ophthalmoscope, but could not detect any appreciable change in the size of the retinal vessels.

On Wednesday, the 25th, the pulse was 35, and the respiration 12; the heart-sounds were heard with remarkable distinctness, owing to their slowness. The man complained much of cold when uncovered, but said that when the clothes were on he was quite warm, except his face. When the foot was pinched, the leg was drawn up; thus proving that some reflex excitability remained.

On Thursday, the 26th, the pulse was so weak that it could only just be felt, and the surface was very cold. He seemed a little dull of comprehension, and answered questions very slowly. Mr. Williamson noted a kind of grin on his face almost like that of commencing tetanus, and he also observed that there was a tendency to constant contraction on the part of the biceps. You will remember that I said that, when admitted, his biceps muscles had escaped paralysis. At that time he could use them and relax them at will, his arms lying at rest by his side except when he chose to move them. At this later date, however, the elbow was kept constantly flexed, there was considerable resistance if an attempt was made to straighten it, and the flexion returned immediately that the extending force was removed. His cheeks and lips still had a good rosy colour.

On Friday, the 27th, he was so dull that he could not answer questions intelligibly; his pulse at the wrist could not be felt; the sounds of the heart were so weak as scarcely to be heard, and its strokes so feeble that they could not be counted. From this time he gradually sank, and death took place on Saturday afternoon (28th). During the last twenty-four hours his face was blue. His temperature just before death, both in the rectum and the axilla, was 95°. The thermometers were left in place until the time of the post-mortem examination, and no increase took place.

The post-mortem proved that there was no injury to the brain nor to either the thoracic or abdominal viscera. The heart was flaccid, and all its cavities contained some blood; the cervical spine had been fractured through the body of the fifth vertebra, and the cord crushed at that level; its theca were not torn, and the cord still retained its form. I show you the specimen, and you will observe that it was not permanently compressed, as, in fact, in these injuries it scarcely ever is, and that the chief proof of lesion to it consists in the presence of some extravasations into the centre of its substance. These extend through a length of about an inch, and are opposite the fifth and sixth vertebræ.

I have been in the habit, before the occurrence of this case, of telling you that after fracture of the spine, when the immediate influence of shock has passed off, the temperature usually rises, and of citing this increase of temperature as proof of paralytic dilatation of the bloodvessels consequent on the damage done to the sympathetic, and I have frequently called your attention at the bedside to the throbbing arteries, slow pulse, and hot skin. The occurrence of this case, however, led me to look into the subject a little more closely, and to refer to notes of other cases bearing upon the subject. The general result of my examination has led me to believe that, although increase of temperature is the rule, it is liable to not very infrequent exceptions, and that some of these are very remarkable. Nor have I found it at all easy to explain why this should be so, why, in fact, we should have some cases of fracture of the cervical spine in which the patient becomes very hot, and others in which he becomes very cold.

I will contrast with the case which I have just detailed to you one which I find very carefully recorded by Mr. Frederick Churchill in the 1st vol. of the St. Thomas's Hospital Reports. A young man in performing a gymnastic feat sustained a fracture of the arch of his fifth cervical vertebra. At the autopsy the cord was found to be crushed and ecchymosed at the level indicated, but there was no permanent compression. Thus the part injured and the kind of injury were almost exactly the same as in our case. His symptoms during life, as regards paralysis, were very similar, for he had "slight power of moving the shoulders and upper arms," whilst everything below was paralysed. He lived from September 25th to September 28th—i.e., nearly four days,—whilst in my case the man lived nearly six. As in my case, priapism was present. In both the breathing was diaphragmatic. Let us now note the differences as regard the circulation and temperature. Mr. Churchill records on the first day "decided turgescence of cutaneous capillaries generally, skin very hot, face flushed, temperature in axilla 104°." On the next day the temperature was 104·5°; the pulse 96, regular, and quiet. On the third day the temperature was 102°, pulse 96 and quiet, but the patient was irritable, and complained much of the noise. On the night following he was quietly delirious, but had no sleep. The temperature in axilla was 106°, and of the foot 104·4°, on the morning of the fourth day; the breathing had become more embarrassed, and chilly feelings were frequent. He died "in a violent spasm" soon after midday, and a quarter of an hour after death the axillary temperature was 110°.

I have taken Mr. Churchill's case in preference to any of my own, because it is in some respects better marked than any one of which I have notes, and the observation of high temperature was unusually early. I believe, however, that it is only a rather strongly characterised example of what is fairly common. In a lecture which I published in 1866, the following summary of my experience at that time occurs. It refers chiefly to the heart's action and the state of the

arteries, but the temperature will, I believe, be usually found in ratio with these.

"*Effects of Injuries to the Cord upon the Heart itself.*—Unless the injuries be in the cervical region, no influence upon the heart's action is observed. When high up a very peculiar condition results. The pulsations are diminished in frequency, and the pulse (from the paralysis of the artery) is remarkably full and large. Your first impression is that it is much slower than you find it to be on counting; at least, this has generally been my experience. It feels remarkably deliberate. The manner in which the heart seems exempted from all share in the patient's general excitement is sometimes very curious. I recollect well going to the bedside of a poor fellow who had been admitted a few hours before with a fracture of the fifth cervical. It was one of those cases in which the boundary tract of skin between that quite paralysed and that enjoying perfect sensation was excessively tender. He was screaming with pain, and his countenance expressive of the utmost suffering and anxiety, yet his pulse, which we might have expected to be quick and excited, was slow, full, and deliberate, about 48 in the minute. Although the pulse after injuries to the cervical cord becomes slow, it does not intermit. After injuries to the brain, on the contrary, as I have shown elsewhere, it becomes slow and frequently intermittent, especially if the patient be a child."*

(To be concluded.)

Lumleian Lectures

ON LIFE AND ON VITAL ACTION IN HEALTH AND DISEASE.

Delivered at the Royal College of Physicians,

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LECTURE III.—PART II.

THE HIGHEST FORM OF VITAL ACTION—BIOPLASM OF NERVE.

I VENTURE to think, therefore, that we may entirely dismiss from our minds every vestige of the notion that the action of any nervous apparatus is mechanical, or that any part of it can be formed by physics or chemistry. I beg you to utterly refuse to accept the notion that mental action is a form of physico-chemical change, on the ground that neither the structure, nor the mode of growth, nor the mode of development, nor the action of the very simplest nerve apparatus in nature, can be adequately explained at this time, and because the simplest changes in the simplest living forms in existence cannot be accounted for by physics.

Let us, then, pass on to the consideration of the action of the nervous system, particularly with reference to the part played by the bioplasm in the construction and action of that most wonderful apparatus.

As far as I am able to learn, there is in every nervous action something behind that part of the process which is plausibly considered to be physical. Before the simplest reflex act can be completed there must be a nerve-current, and the latter cannot be set free unless some chemical change occur. The matter undergoing this chemical change must be *formed*, and its particles must have been so arranged that the changes ending in the development of the nerve-current may occur,—but here we arrive at the bioplasm and its active forces and powers.

I am not one of those who regard the nerve-force as some mysterious and very peculiar form of energy, and am quite ready to accept the view that the current that passes along the nerve-fibre is electricity, or something very closely allied or related to it. I can conceive that many of the phenomena of the nervous system are a consequence of nutritive acts, and that the latter are, in their turn, controlled and regulated by nerve-action. I was, in fact, the first to describe the distribution of nerves to capillaries, and to point out that these form the afferent part of a self-regulating nerve apparatus connected with the distribution of blood. I showed how, when nutrition was too active, or when the capillaries were unduly distended with blood, an impression might be produced upon the *afferent* nerve-fibres of the capillaries, and by these and the fibres with which they were continuous transmitted to the nerve-centre. The immediate consequence would be a disturbance of the nerve-current traversing the *efferent* nerve-fibres which are distributed to the circular muscular fibres of the artery. These immediately become shortened to a certain definite extent, mainly determined by the intensity of the impression upon the afferent fibres. Thus the diameter of the vessel is temporarily lessened, and, the flow of blood to the capillary vessels being reduced, the supply of nutrient material distributed to the tissues is for a time lowered. As the nutritive balance is restored by the agency of the same apparatus, the constriction of the arteries is relaxed to a certain extent, and the blood-supply becomes equalised. This is only a part of those wonderful and extensive arrangements existing in connexion with man and the higher animals for the purpose of regulating the supply of nutrient material, equalising temperature, and generally preserving the balance with reference to the results of many conflicting actions, notwithstanding great irregularity in the supply of nutrient matter, and of substances concerned in necessary chemical change, and the most striking and rapid alterations in temperature, moisture, and other external circumstances. There is, one may say, always a tendency to the derangement of the complex phenomena of the higher organisms, but this tendency is compensated by the most elaborate and beautiful arrangements, of which the self-regulating nerve "mechanism" in connexion with the distribution of the blood in the capillaries is one of the most remarkable.

We must not forget that all the nerves and nerve-centres, and other tissues of which this so-called "mechanism" is constituted, were gradually formed by living matter, and that the action of this apparatus is due to the action of the bioplasm in connexion with it; for when the latter is deranged the action of the "mechanism" is disturbed; if it ceases for a time the action is suspended, and if the bioplasm dies the "mechanism" is destroyed. *Vitality*, therefore, comes into play in the construction of the apparatus out of bioplasm, and in the preparation of the substances by chemical change in which the nerve-current is established. The nerve-current, whatever may be its exact nature, results from changes in matter formed by bioplasm. But the actual nature of the nerve-current is only a very small part, and by no means the most important part, of the great question of the general nature of nerve-action. The nerve-current may be the same form or mode of force in all creatures, the different results effected by it in different animals being due rather to differences in the construction and arrangement of the nerve-apparatus of the organism than to differences in the current which the nerves transmit. But the development and arrangement of the nerves are entirely dependent upon bioplasm. It has been shown that whenever nerve-fibres are being formed bioplasm exists in large quantity, just as in the case of other textures undergoing development. There is no reason to suppose that the part of the fibre which transmits the nerve-current is a very exceptional form of tissue, or that the active part of the nerves of one of the lower animals is very different in chemical composition from that of man. It is even conceivable that some human nerves might be replaced by those of animals, and action proceed as before.

Whether the bioplasm which takes part in the development of nerve-fibres, and which is found in connexion with the active part of all nerve-fibres, at every period of life, is concerned in receiving impressions, or whether this office is performed by the fine nerve-fibres only, is a question of great interest, and well worth the most careful consideration.

I have shown that in all sensitive organs, and among the peripheral ramifications of all nerves, bioplasm particles are

* London Hospital Reports, vol. iii., pp. 365-6.

very numerous. In the retina, more than one layer consists almost entirely of bioplasm particles, and the delicate nerve-fibres connected with them. In connexion with the nerves of the sensitive part of the cochlea they are very numerous. Many more are found upon the peripheral ramifications of the nerves of the gustatory than upon those of the tactile papillæ of the tongue. In the tactile corpuscles, in the tactile papillæ connected with mucous membrane which are very numerous and well developed about the lips of serpents and many fishes, these masses of bioplasm exist in immense number. In short, in connexion with all nerves forming the terminal expansions which constitute the essential part of sensitive nerve organs, these masses of bioplasm are numerous; and it is a fact of not less importance, with reference to the question of the function of these particles, to bear in mind that numbers are found in connexion with the ultimate ramifications of motor nerves distributed to some muscular fibres which are highly active, like those of the diaphragm and tongue. In the case of some muscles, the terminal nerve-fibre is, at certain points, highly convoluted; and here we find the masses of bioplasm very numerous, and situated very near to one another. All these facts support the inference that these masses of bioplasm are intimately connected with the action of the nerve-fibre as well as being concerned in its formation.

But, on the other hand, there are very few upon the finest ramifications of nerve-fibres in the serous membranes which become extremely sensitive in disease. It might, therefore, be argued that the pain results rather from pressure upon, or stretching of, the finest nerve-fibres in the intervals between the bioplasts, than from any direct pressure or other influence upon the bioplasts themselves. Again, in the imago state of many insects the finest ramifications of the nerve-fibres exhibit very few bioplasts in their course. I have traced excessively fine fibres and networks of fibres in the intervals between the layer of cells which forms the inner surface of the skin of the blow-fly; in connexion with which I could discover minute bioplasts only at considerable intervals. The same remark holds good to a less extent with regard to the distribution of nerves to the involuntary muscles.

At the same time it must, however, be borne in mind that nowhere are the peripheral ramifications of nerve-fibres *destitute of bioplasm*. If this were so, they would probably deteriorate, and no new ones could be formed. Probably one-hundredth of an inch is the greatest length of peripheral nerve-fibre on the higher animals which intervenes between two bioplasts.

Upon the whole, then, I conclude that although the bioplasm is necessary to the peripheral expansion of nerves, it is not the material which is in all cases absolutely essential for the reception of impressions and their conveyance to distant parts. I think, however, there is little doubt that the bioplasm of peripheral nerves develops nerve-currents—feeble, perhaps, as compared with those set free by central nerve-cells, but yet of sufficient intensity to influence the nerve-centre. This view is supported by the fact that small central nerve-cells found in many of the ganglia are, as regards size, shape, and general characters, very like the masses of bioplasm attached to the peripheral ramification of nerves; indeed, in many of the lower animals no difference whatever can be detected between the peripheral and central part of the nerve apparatus.

Besides developing feeble nerve-currents, the peripheral nerve-bioplasm is concerned, as has been already remarked, in the formation and renovation of the nerve-fibres. This change is constantly proceeding in all nerve organs. New nerve-fibres of extreme delicacy are being continually formed. Old ones as continually waste, leaving behind a small proportion of connective tissue, which we find in all nerve organs, and which increases as age advances, even to such an extent as to render it a matter of great difficulty to demonstrate the excessively delicate and almost structureless nerve-fibres embedded in the mass of fibrous material.

There is yet another important change in which these bioplasm particles, so numerous in connexion with the peripheral expansion of nerves, probably take part, and this is the development of heat. I have elsewhere adduced many arguments which seem to me to render it almost certain that the growth of bioplasm generally is associated with a rise in the temperature of the body. Is it not possible that, under certain circumstances, the mode of force developed in the matter of the nerve-bioplasm may be changed, heat being rapidly produced instead of nerve-force? The suggestion at once occurs, whether the explanation of such exceptional cases of high temperature as that brought by Mr. John Teale before the Clinical Society a short time since, will not probably be found to have something to do with the phenomena of nerve-bioplasm. In this case a temperature of 122° was reached on several occasions, and one above 112° was maintained for several days without any of the symptoms usually associated with febrile disorders in which the body heat rises.

BIOPLASM OF THE BRAIN.

Let me now pass on to the last part of my theme, and endeavour to ascertain whether the most wonderful phenomena in nature—namely, those connected with the operation of mind—have their origin in bioplasm. The only instrument concerned in thought attains its highest state of development in man. Not only is man's brain, as compared with that of a lower animal, actually very large in proportion to the body, but the difference will be found to be really much greater than it appears to be. The size of a nerve-centre is, as is well known, by no means determined by the size of the animal. Varied combinations of rapidly-executed movements will necessitate a brain of a size very large in proportion to that of the animal, and hence, as a rule, the brains of very small animals are enormous. The smaller the species the greater will be the weight of brain in proportion to body-weight. Now, man's muscular movements are by no means so varied or so powerful in proportion to the amount of muscular tissue, or so rapidly executed, as those of many of the lower animals, which easily beat us as to the rapidity with which they execute complex movements. We are also behind many animals as regards the sense of touch, as well as regards the great power and precision with which the voluntary muscles of many animals act in running, leaping, climbing, and other movements. The size of man's brain, therefore, is not due to those circumstances which determine the large size in proportion to the body of the brain of the mouse or of the tom-tit, for example. Man, indeed, can only be placed at the summit of the scale of being in certain particulars, but in these he stands alone; no lower creature approaches him, or can be compared with him. In man, the action of every tissue and organ seems subordinate to that of the higher parts of his nervous system, which constitute an instrument remarkable not less for the complexity and subtlety of its delicate actions than for the capacity exhibited by it alone for improvement after its development as an organ may be regarded as complete; and not only so, but the degree of perfection it may attain as an instrument is determined to a great extent by the will of him to whom it belongs. In the formation and action of this organ bioplasm is all important, and exists in greatest amount in that part which, upon other grounds, we know is concerned in mental action.

The very highest form of bioplasm or living matter in the world is that which, as I believe, is concerned in mind, and this attains its highest state of activity not until the age when that part of the nervous apparatus concerned in mental operations has attained a high degree of elaboration. This period cannot be assigned with precision, for it differs in different races and in different individuals, but it is never reached until some time after growth has ceased, and every tissue and organ is fully developed. But it is certainly very remarkable that, as far as I am aware, those parts of man's brain concerned in the manifestation of his highest mental faculties constitute the only structures in nature which continue to improve for many years after the rest of the organism has attained its highest state of development. So also these, above all structures, are remarkable for continuing to improve although many tissues of the body may have been for some time undergoing deterioration and decay.

The anatomical elements which constitute the grey matter of man's brain are well known. Large angular cells, with fibres radiating from them, the longest fibre passing upwards towards the surface, near which it divides and subdivides into multitudes of the finest and most delicate threads, which form with fibres from other cells and other parts an inextricable interlacement. In this situation, no

doubt, all the operations of the mind are performed. But to explain what happens in connexion with the structures demonstrated, when the instrument is in active work, is no easy task. From a knowledge of the arrangement and action of the structure, we ought to be able to form some conception, however rough, of what happens when an idea is formed and when it is expressed so as to be rendered evident to others. The facts of the case seem to demand a means by which the mind may act upon the elaborate system of nerve-fibres already referred to. We seem to require an instrument, and the means of acting upon different parts of the instrument as we may will.

It is not easy to conceive by what means the angular cells, which form such prominent objects in the grey matter, could will. That these are concerned in the formation of the fibres is certain, and it is possible that in them nerve-currents may originate, but it is very doubtful whether the bioplasm of these cells is the bioplasm concerned in thought. There are other bioplasm particles, and in enormous numbers, though they do not constitute such prominent objects as the angular or caudate cells. These are little spherical particles of bioplasm, many of which are smaller than a red blood-corpuscle, and are probably connected by communicating fibres of great delicacy. These bodies are situated near the surface of the grey matter among the ultimate subdivisions of the excessively delicate nerve-fibres. It is to be remarked that in this situation the supply of arterial blood is more abundant than in any other part of the nervous system, and the particles of bioplasm in question, being naked and unenclosed in any cell-wall at any period of life, are just such as we should expect would undergo rapid change. These are, I believe, the active agents which, by their movements, may act upon the delicate nerve-threads which ramify on all sides in very close proximity to them. When we examine these particles of bioplasm after death they are spherical; but are we not justified in assuming that during life they may change in form, at least as much as a mucus-corpuscle or an amœba? The slightest alteration in form would influence the current traversing the nerve-fibres that were close to them. These delicate bioplasts are, I believe, during the waking state continually undergoing changes in form. That in some situations they increase in number cannot be doubted, and it seems likely that collections might increase in extent even long after the formation of the brain had been completed. What is very remarkable is, that these bioplasts retain their primitive characters throughout life.

I dare say few persons will be persuaded to believe that the bioplasts concerned in the highest mental acts of man are bodies not more complex than the lymph-corpuscle or the white blood-corpuscle; but, as I have before remarked, all evidence is in favour of the view, that exalted function is not dependent either upon complexity of constitution or upon quantity of material. There are no differential characters to be demonstrated between different forms of living matter having widely different endowments, by which the peculiarities may be accounted for. There may be difference in power not dependent upon differences as regards matter and its forces. May we venture to conclude that *mind* is the form of *vital* power which, stirring in these particles of bioplasm, causes the movement of the matter of which they consist, and that thus the elaborate mechanism slowly constructed and gradually brought to perfection is influenced? If this be so, mind is the highest form of vital power which exists in nature, by which particles of matter are caused to move in a definite manner for a definite purpose.

I have endeavoured, Mr. President and gentlemen, in these lectures, to give a brief sketch of the phenomena peculiar to living matter in health and disease. It would be wiser, perhaps, in the present state of knowledge, to be content with the study of phenomena, and not to speculate upon the causes of things; but ought I, in face of the facts, to resist the temptation of postulating a power, the existence of which I cannot hope to demonstrate; and may I venture to refer all the wonderful changes I have described to *vitality*—a power that works in living things only?

Let me, in conclusion, heartily thank all for their kindness in patiently listening to a discussion which, however interesting to some, must have seemed tiresome to not a few.

ON

RECENT IMPROVEMENTS IN THE DETAILS OF ANTISEPTIC SURGERY.

BY JOSEPH LISTER, F.R.S.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

(*Continued from p. 605.*)

THE moist boracic lint is also a convenient dressing after operations upon the penis. Here the frequent exposure of the part for the purpose of micturition makes it necessary to entrust the antiseptic management on each occasion to the patient himself, so that some very simple arrangement is indispensable. With this object a strip of the moist boracic lint may be wound round the organ and secured in position by a piece of thread or narrow bandage, so as to cover the wound but leave the meatus urinarius free; and outside this permanent part of the dressing a loose piece of the wet boracic lint is wrapped and covered with gutta-percha tissue. Then at each time of micturition the patient removes the outer piece of lint, and readjusts it at the conclusion of the act, after pouring over the part a little of the boracic lotion. The unirritating character of the solution of boracic acid to mucous membranes, which is a peculiar feature of this antiseptic, prevents any inconvenience to the urethra from such treatment, which at the same time affords perfect security against putrefaction, yet allows healing to proceed kindly.

The most frequent case of operations in this situation is that for phimosis. It is now about ten years since it was pointed out by Mr. Furneaux Jordan, of Birmingham, that sutures are unnecessary after this operation, and that, after notching the narrow ring of the preputial orifice at one or more situations according to its tightness, and slitting up the inner layer of integument which embraces the glans, to a sufficient degree to permit free retraction, all that is required is to employ a simple dressing and to make a point of having the glans freely exposed once in twenty-four hours; the result being avoidance of the unseemly notch which the stitch, if it really answered its purpose, inevitably occasioned. Ever since the publication of this simple method I have invariably followed it, and, as a rule, with great advantage; but not unfrequently the attainment of the object has been seriously interfered with by inflammatory swelling. But if putrefaction, which is the main cause of disturbance after this operation, is prevented by the boracic dressing, the œdematous puffiness of the prepuce, otherwise so apt to give trouble, is almost entirely avoided, provided that the incisions have been made sufficiently free to allow the utmost facility of retraction. It is, however, essential to the success of the antiseptic dressing that the organ should be thoroughly purified at the outset, as by washing the interior of the prepuce and the glans at the conclusion of the operation with saturated watery solution of carbolic acid (1 to 20), completely removing any portions of epithelial accumulation adhering about the frenum and corona. A narrow strip of the boracic lint is then wound round the neck of the organ and the retracted prepuce, with the object of keeping the parts in this position, except once a day when the skin is drawn freely forwards and again retracted. But if, as is often the case, there is an insuperable tendency of the skin to slip forwards, the permanent dressing may be dispensed with, the general covering of boracic lint being alone employed, with very free use of the lotion after each act of micturition, together with complete retraction once in twenty-four hours.

The last case in which I was called upon to operate for cancer of the penis may be given as another illustration of the value of this dressing. The integument being, as usual, less implicated than the spongy and cavernous structures, I proceeded as in a modified circular amputation in a limb, dividing the skin sufficiently in advance of the deeper parts to form a covering for them, and cutting its margin in the shape of short antero-posterior semilunar flaps which might be accurately adjusted without puckering, the removal being completed by a transverse stroke of the knife after retraction of the loose investment. I next sought to carry out

the valuable principle first suggested by the late Mr. Teale, of Leeds,* of endeavouring to obtain union by first intention of the mucous membrane and the skin, so as to prevent subsequent contraction of the orifice. I first slit up the urethra longitudinally at its inferior part for about a third of an inch from its transversely divided extremity in the stump, as advised by Teale, and then perforated the tegumentary pouch at its ventral aspect by a cut equal in length to that in the urethra, taking care that the two openings should exactly correspond in position, and stitched the edges of the hole in the skin accurately, with silver wire at the angles and horsehair along the sides, to the margins of the mucous membrane, paring off the angles of the latter so as to form an oblique oval orifice to the urethra. The edges of the little skin flaps were now also brought closely together with horsehair stitches, except in the centre, where a drainage-tube of crowquill size was inserted to prevent tension from accumulating blood and serum. The operation was performed under the spray, after the skin had been cleansed with a 1 to 20 carbolic lotion. The vessels having been tied with fine catgut, moist boracic lint was carefully adjusted so as to cover the end of the stump, but leave the urethral orifice exposed; and outside this permanent dressing a loose piece of the wet boracic lint was wrapped and covered with gutta-percha tissue, tied with the split end of a bandage which encircled the pelvis. This outer dressing was of course removed by the patient for micturition, and readjusted after washing with boracic solution; but the deep dressing was left untouched for two days, when it was taken off, entirely free from urinous odour, and, the drainage-tube having been taken out, fresh boracic lint was applied in the same way. The wound was again inspected two days later, and, as there was not the slightest inflammatory blush, and the stitches were evidently occasioning no tension, they were left undisturbed for three days longer, when they were found still lying in their places as they were after the operation a week before, and on their removal the cutaneous and mucous surfaces were found connected all round the urethral orifice in a line of perfect primary union, and the wound over the end of the stump was likewise entirely healed except the part where the drainage-tube had lain. The same dressing was continued till this spot also had cicatrised, the blood-clot within the pouch of skin becoming organised without suppuration; and the patient left the hospital three weeks after the operation, having suffered literally no pain or inconvenience from first to last, and with a remarkably natural appearance of the part.

This case illustrates well, though on a small scale, the whole subject of this paper. Without antiseptic measures the careful fitting and close stitching of the parts would in all likelihood have been so much trouble thrown away. The wound at the end of the stump would probably in a few days have been freely opened up through suppuration due to putrefaction of the blood-clot in the investing pouch, and the stitches around the urethral orifice would soon have cut their way out under the influence of acrid ammoniacal urine. Again, even though putrefaction had been prevented, had the little drainage-tube been omitted and an additional stitch inserted in its place, tension from accumulated blood and serum would have arisen, producing inflammatory disturbance which might have marred the whole result. And, lastly, if an antiseptic more irritating to the skin or mucous membrane had been kept in contact with the wounds, it would, in proportion to the degree of its irritating property, have interfered with the primary union both at the new meatus urinarius and at the end of the organ.

It is with regard to this last point that the special value of boracic acid is exemplified. In such a situation it would have been practically impossible to maintain in position a protective layer such as is used under a dressing of carbolic acid; but, thanks to the mildness of the watery solution of boracic acid, the absence of such protective and the frequent copious ablutions with the antiseptic were productive of no disadvantage.

In further illustration of the value of the wet boracic lint for operations in this situation I may mention a case of aggravated hypospadias under my care last winter. The floor of the urethra was deficient from the end of the penis to about the middle of the scrotum, which in its cleft condition resembled at first sight the labia of a female; and for about three-quarters of an inch from the end of the glans the mucous membrane was entirely absent, a shallow sulcus lined with the integument being the only indication of the canal. The mode of procedure adopted was as follows:—A straight rod, as large as a full-sized catheter, being held vertical by an assistant, with its extremity inserted in the orifice of the complete part of the urethra in the scrotum, the skin of the penis and front of the scrotum, by virtue of its extreme laxity, could be readily made to slip upon itself so as to cover in the straight bougie, meeting in two folds in the middle line, and my object was to get the margins of these folds to unite by paring them and stitching them together, so as to complete the urethra with epidermis-covered skin on the internal as well as the external surface. But, as I knew that perfect absence of tension in the uniting parts would be essential to success, I freed the skin by three preliminary incisions, one in the middle line of the dorsum of the penis throughout its length except the preputial margin, and two in the anterior part of the scrotum, obliquely placed so as to be more or less parallel to the urethra at that situation. These incisions gaping widely permitted the cutaneous folds to meet with the utmost freedom in the situation of the proposed raphe, and their rounded margins being pared off, they were closely sewn together with deep sutures of silver wire and intermediate superficial ones of horsehair for accurate approximation of the external cutaneous edges, the wounds at the sites of the preliminary incisions being left to heal as they might.

As regards the antiseptic measures, the penis and scrotum were thoroughly washed with 1 to 20 carbolic lotion before the operation, which was performed throughout under the spray, as it was of essential importance to avoid the presence of any septic material in the blood-clots which might collect between the approximated raw surfaces or in the interior of the new urethra. Then with respect to the subsequent avoidance of the access of putrefaction, I knew that no contamination would come from within—that is to say, from the sound part of the urethra,—because it had been abundantly established by experiments which I had made with reference to the germ theory of fermentative changes* that a perfectly healthy urethral mucous membrane is free to its extreme orifice from septic organisms. All that was needed therefore was an efficient external antiseptic dressing, mild enough in its action to permit healing to take place beneath it, for which purpose wet boracic lint was the most eligible. But there was this peculiarity in the present case, as compared with that of cancer of the penis above recorded, that the patient, being only six years old, could not be entrusted with the management of any part of the dressing on the occasions of micturition; and even if a special nurse were provided for this charge, there would be great risk of negligence on her part letting in the septic mischief. This difficulty was got over by never allowing the parts to be exposed at all, either by nurse or patient, but keeping them permanently covered with a mass of moist boracic lint, securely fixed in position by stitching it to a T bandage, the ends of the split longitudinal part of which were not only attached to the part that encircled the pelvis, but were also carried round the upper parts of the thighs and crossed over the perineum. Over this permanent dressing was applied an apron of wet boracic lint and gutta-percha tissue, fixed by an ordinary T bandage, which could be loosened at pleasure; and directions were given to the nurse that when the boy, whose hands were tied out of harm's way, wished to relieve the bladder she should loosen the outer bandage, and, raising the apron, allow him to pass his water through the mass of the permanent dressing into a bed-pan placed beneath him to receive the urine and also a copious effusion of saturated boracic solution which was to be poured on at the conclusion of the act; after which the apron was to be readjusted. This plan answered completely: there was nothing to indicate inflammatory disturbance; and when, after the lapse of about a fortnight, the stitches were removed, perfect union was found to have taken place along the middle line, except a small oval aperture about the base of the prepuce and a minute orifice, like a pin's point, at the scrotum, which now no longer suggested by its form the characters

* Quoted in Holmes's Surgery, 2nd Ed., vol. v., p. 181, by Prof. Humphry, who, however, proposes another mode of procedure, which suggested to me the idea of providing a covering of skin for the end of the stump in combination with Teale's plan.

* See "A further Contribution to the Natural History of Bacteria, &c.," Quarterly Journal of Microscopical Science, Oct. 1873.

of the other sex. The retractile preputial covering of the glans was quite natural in appearance, except the oval aperture before mentioned, which will no doubt be readily closed at a future period; and the new canal, being formed of non-contractile material, is sure to remain of adequate calibre. The sores resulting from the incisions were at the same period far advanced in healing, and their cicatrisation was soon completed under a continuance of the same mode of dressing.

There can be no doubt that the irritation caused by fermenting urine has hitherto been a great cause of failure in plastic operations in this situation; for which, therefore, we may fairly anticipate a far greater measure of success in the future.

While this paper has been going through the press, another case has occurred so illustrative of this department of the subject that it seems deserving of introduction. A boy nine years old being brought to me on account of difficulty of micturition, I found that though, on superficial inspection, the meatus urinarius appeared natural, it was merely represented by a shallow sulcus in the integument, except at the posterior extremity, where an orifice existed so minute as only to admit the eyed end of a fine sewing needle. It would have been an easy matter to have extended this aperture by cutting backwards; for the soft parts between the urethra and the surface were very thin at the ventral aspect of the organ, so that the edges of the divided skin and mucous membrane could have been readily brought together by sutures for primary union. But such a procedure would have resulted in an inferiorly situated meatus urinarius, or, in other words, a degree of hypospadias. On the other hand, to cut forwards through the substantial spongy texture of the glans seemed at first sight most unpromising, because it would be impossible to cover in the wound with skin or mucous membrane, and the lateral granulating surfaces which must result would have a powerful tendency to coalescence at their angle of union in front. But on reflection I determined to try this latter method, in the hope that a more favourable issue might be obtained through avoiding as much as possible all irritation of the divided textures, by providing a smooth metallic surface for contact with them, and at the same time preventing the urine from becoming acrid through putrefaction. The operation was performed, on the 9th of March, by making successive notches forwards with a tenotomy knife guided by successively larger metallic rods till the incision extended through the whole length of the superficial sulcus which indicated the natural position of the meatus, and a No. 12 bougie could be passed freely into the canal. I then introduced and secured with a T bandage a gum-elastic catheter, of about No. 9 size, having its anterior end sheathed for an inch and a half or so with a tube of Berlin silver, to serve the double purpose of presenting a smooth surface to the divided textures and conferring rigidity upon the portion of the flexible tube which occupied the terminal part of the canal and that which projected beyond it, so that it might be tied in with perfect security. The metallic portion was also expanded at a short distance from its free end into a collar presenting a concave surface towards the glans, to protect the new meatus from irritation by the threads used for tying in the instrument. The catheter was made long enough to reach back to the membranous part of the urethra, but not into the bladder, in order to allow the patient control over his urine; and the eye was terminal instead of lateral, to admit of free exit for the fluid. The antiseptic arrangements were exactly as in the last case; that is to say, I trusted to the ascertained physiological fact that the healthy urethra contains no fermentative organisms; and, after scrupulously cleansing the external integument with 1 to 20 carbolic lotion, conducted the entire operation under the spray, and at its conclusion packed moist boracic lint around and over the organ, making it especially substantial in the perineum, where the urine would flow down; and over this permanent dressing, which was fixed by stitches to the retaining bandage, was arranged a movable portion, in the form of an apron, of boracic lint, covered with thin mackintosh; a special nurse being provided to watch the boy, and attend to him during acts of micturition, as in the former case. The deep dressing was left untouched for five days, except that the patient passed his water through it, and that boracic lotion was poured freely over it after each occasion. When removed, it was found free from any ammoniacal odour, and a similar dressing was applied without disturbing the catheter. The second deep dressing was left untouched for another week, the boy meanwhile having lost entirely the pain in micturition of which he complained during the first few days; and when the lint was changed, after being soaked for seven days with urine, it was, like the first dressing, entirely free from ammoniacal smell. The catheter being now removed, the meatus presented the appearance of being completely cicatrised all round; but at one spot the surface, though smooth, looked so delicate that I thought it prudent to apply one more dressing, as before, to protect the tender part from the irritation of putrid urine. The catheter, however, was not reintroduced. Finally, on removing this last dressing five days later, I found the epithelial lining of the meatus obviously firm and sound throughout, and the orifice still freely admitted a No. 9 bougie. Thus, during the five days in which the newly made canal had been left unsupported, no contraction whatever appeared to have occurred—a result which seemed to be explicable by the healing having taken place, as it appeared, without the occurrence of granulation, so that the new tissue which had formed over the raw surface was in so thin a layer that the effect of its shrinking was insignificant.

(*To be continued.*)

NOTE ON THE

LATE REPORTED CASE OF DEATH FROM THE INHALATION OF ETHER, AND ON THE AMYLS AS ANÆSTHETICS.

BY BENJAMIN W. RICHARDSON, M.D., F.R.S.

A DEATH under the inhalation of ether has recently been reported from the infirmary at the workhouse at Manchester. I think it my duty to explain that the death in this instance was not due to pure anhydrous ether, and that the practice of administering pure anhydrous ether for the purpose of causing general anæsthesia ought not to be arrested by that untoward event.

The ethereal fluid employed on the occasion named was the compound fluid which I introduced some years ago, solely for local anæsthesia. It is a mixture of amyl hydride and anhydrous ether, the two fluids being blended until the specific gravity is ·650. This exceedingly light fluid has advantages over the simple anhydrous ether for local application as spray; it acts for this purpose almost instantaneously in rendering the part insensible by cold, and it causes less irritation of exposed parts; but it was never intended for general anæsthesia, and it has always, I believe, been sent forth by the manufacturers, Messrs. Robbins, distinctly labeled and described as for *local* use.

From the post-mortem appearances in the patient who died at Manchester it is perfectly clear that the death was not produced by pure anhydrous ether, for not one of the special evidences of that agent was present. The evidence is all but conclusive that the death occurred purely from syncope. The patient was much perturbed mentally, and the mode of death was not by asphyxia, as is common from ether, but by failure of the heart.

At the same time, the lighter bodies of the amyl series are not commendable as general anæsthetics. They are rapidly acting anæsthetics, but their extreme insolubility and low boiling points render them dangerous in action. It is further worthy of note that, when they kill, they kill from the heart. This is true of amylene, of amyl hydride, and of amyl chloride.

I suggest, therefore, that although in the case under consideration the death was probably independent altogether of anæsthetic influence, it is important not to employ the members of the amyl family until we know more about their physiological value. Two investigators only, Snow and myself, have as yet systematically studied them as general anæsthetics, and, promising though they appear at first sight, our combined experience is against their employment.

But what I wish specially to state is, that pure anhydrous

ether (though it is not absolutely free of danger) should be exempted from all blame in the fatal catastrophe, the report of which has called forth this brief communication.

Hinde-street, W.

THE TREATMENT OF PRIMARY DISEASES OF THE HEART.*

BY J. MILNER FOTHERGILL, M.D., M.R.C.P.,
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THE successful treatment of disease of the heart, perhaps more than that of any other class of ailments, rests upon an accurate diagnosis. Doubtless, in an organ acting so mechanically, the good effects of rest are ever apparent. But our remedial measures are not to be restricted to the negatively good results of diminished demand upon the organ. Much, often very much, can be done by well-selected remedial agents. In the selection of these agents it is of the utmost importance that the real and actually existing state of matters be distinguished and clearly appraised. For instance, the patient may present all the symptoms of a somewhat feeble heart, with occasional attacks of dyspnœa, which are both distressing and alarming. Now, it is perfectly obvious that here we may have one of two distinct ailments to deal with, and that the treatment should be widely different, according to the pathology of the case. There may be primary debility of the heart itself—how induced we cannot stay to inquire,—with occasional periods of pronounced adynamy, usually induced by the demand of effort; or, on the other hand, the heart may not be a powerful one at best, but the attacks of dyspnœa &c. may be the consequence of arteriole spasm raising the blood-pressure, and so causing ventricular distress from the difficulty of contraction in the face of an increased arterial tension. I submit that the treatment will vary much in these two similar but really unlike cases. The treatment of the first is the treatment of primary debility in the heart itself; the treatment of the second is the treatment of the condition of arteriole spasm, the removal of which relieves at once the labouring left ventricle. The attempt to whip on the failing heart by digitalis, &c., in this latter case, is unsatisfactory, and not rarely produces a hammering action of the heart more disagreeable and alarming than the primitive ailment. A great many of the cases of heart affection presented to us for treatment are secondary and not primary affections, and are to be treated with reference to their causation. These affections are very interesting; but their consideration must follow and not precede that of the primary affections of the heart.

Primary affections of the heart are of various kinds. The most frequent, doubtless, are those where the valvular apparatus of the heart is injured. In other cases there is muscular debility alone, arising from sustained overexertion, myocarditis, &c. When muscular atony or adynamy exists without valvular disease, the treatment of the case is satisfactory in many instances. If of recent standing, by means of rest, good food, and cardiac tonics, the tone of the ventricle may be restored in a brief time, and that restoration may be permanent. Two such cases I have related in my book on the "Diseases of the Heart," and I can now add that both persons are still working away without any evidences of cardiac failure. In the case of the one, a young man, this is less remarkable than in that of the second, an elderly woman, who had a dilated heart, an irregular pulse, and œdema of the ankles, brought on by sustained effort in nursing her dying husband. My first impression in this case was that the exertion had revealed the weakness of her heart, already the subject of morbid change. But the effects of treatment were such that it soon became evident that no pre-existing disease had laid lurking and undiscovered, but that the condition was simply due to over-exertion. In a few weeks the evidences of cardiac weakness fled, and the woman has since maintained herself as a field hand, and has enjoyed excellent health. From 1866 to now, 1875 (nine years), continued labour has been undergone without any return of the heart symptoms.

When some permanent injury to the valves exists compensation is attained by increased muscular growth. In its earliest form the heart is merely a pulsatile sac, but as evolution proceeds it becomes four-chambered, while folds of the internal lining form valves, by which the muscular force is aided and economised. When these valves become affected they either become contracted (in which case they offer an obstruction to the forward flow of the blood) or insufficient, and no longer arrest the backward flow of blood on the ventricular systole or the arterial recoil. When the muscular chamber behind the injured valve enlarges and becomes stronger, we denominate that growth compensatory, and we know that such growth endows the patient with a power which is wanting where such compensatory growth does not exist. The indications for treatment, then, are these: to encourage by all means compensatory muscular growth, and, having attained this, to secure it permanently, if possible.

The plan of treatment by which such ends may best be brought about is now pretty well agreed upon. The first indication is to reduce to the minimum the demands upon the heart, to conserve to the utmost its powers. By reducing to a minimum the demands upon the heart, we admit of its recovering itself, as is well seen in the effects of rest in bed in a hospital, without any treatment whatever, in many cases of cardiac failure. When the exertion requisite to earn the daily bread is in action day by day, the heart grows feebler and less equal to the demand upon it; when enforced rest in bed is practised, the heart is not only equal to the diminished demand upon it, but day by day it recovers its tone and approaches its pristine condition. Such a rest for a few weeks at intervals enables many a person with incurable heart disease to undergo the toil inseparable from the struggle for existence. In addition, however, we know that there are remedies which exercise a specific effect over the heart; of these digitalis is the most certain and effective. We cannot here review, however cursorily, the action of digitalis; that would detain us too long. Sufficient it is to say that under its use, when rightly administered, the pulse becomes stronger, more regular, and the number of beats per minute fewer. There is, in fact, a reduction in the number of beats, and a distinct and pronounced augmentation in their power. By this means longer rest is given betwixt each systole, and the aggregate of the heart's sleep is increased. To use the language of Balthazar Foster,* "The diminution in the frequency of the heart's beats under digitalis always means an increase of the period of dilatation of the ventricles. Pulse traces readily show this." Another effect of digitalis is to fill the arteries and to empty the veins.† Consequently there follows a better supply of blood to every part, the heart included, and betwixt a longer sleep and a better supply of arterial blood the heart recovers itself. Chalybeates, good food in liberal quantities, fresh air, &c., are all useful and excellent auxiliaries. Very often, however, the treatment must be followed out steadily and persistently for months, or even years. I have at present under my care a patient who has taken digitalis and iron for seven years uninterruptedly, for the reason that she cannot go a week minus the remedies without suffering in consequence.

These measures, which act directly upon the heart, and which increase its tone and improve its nutrition, are usually sufficient to secure the desired end. At other times, when the case is more pronounced and there is dropsy present, it becomes highly desirable to reduce the bulk of blood by diminishing its aqueous constituents, at the same time relieving the venous congestion. This end can be well secured by hydragogue cathartics. It is my private conviction that such means of relieving venous congestion are too little resorted to. Doubtless, at first sight, it would appear that a patient panting for breath and far advanced in heart disease is not a proper subject for free purgation. But the fact is, four or five copious watery evacuations give much relief to the burdened heart; they reduce the bulk of blood on the one hand, while they improve its quality on the other. The profuse discharges, which would certainly be felt very acutely by a person in health, give such relief in these cases that the relief afforded more than counterbalances the exhaustion which results directly from the purgation. Like digitalis, which disturbs the action of a healthy heart, while restoring the rhythm of a diseased one, so free cathartics,

* Read before the Harveian Society, Feb. 18th, 1875.

* Clinical Medicine, p. 97. † Niemeyer, vol i., p. 358.

which would depress a healthy circulation, give much relief to veins highly distended with water-laden blood. The following case is to the point:—

T. P——, aged seventy-three, came to me at the West London Hospital as an out-patient in August last. He was a spare little man, with a dilated heart, in which there was little hypertrophy, with ascites, œdema up to the knees, and an irregular pulse. He was passing very little water. By the kindness of my senior, Dr. Thorowgood, he was admitted into the hospital, to be under my care. While giving him digitalis and iron, it seemed very desirable to relieve the circulation. This might be effected by either diaphoresis or catharsis. I preferred the latter, and gave two scruples of compound jalap powder every alternate morning. The relief afforded by this plan was very pronounced: the secretion of urine was much increased, the respiration was easier, and the pulse less irregular and better sustained. After eight different purgings he was so much better, and the ascites and œdema so much relieved, that the purging was abandoned, and the digitalis and iron continued. In a short time he became an out-patient, and walks backwards and forwards from Barnes to Hammersmith weekly, without discomfort; in fact, he is proud to say in how short a time he can accomplish his walk without any shortness of breath or sense of fatigue.

This case shows better than any amount of comment the effects of well-directed catharsis in the venous congestion of heart disease. I may add that in repeated cases experience has taught me the value of catharsis in the treatment of cardiac dropsy.

(To be continued.)

DANGERS OF FENCING: SINGULAR ESCAPE.

By THOMAS DANE, M.R.C.S.

SERGEANT-MAJOR S——, Staff Instructor of Gymnastics, was fencing with foils on the 30th of April last. His adversary made a strong lunge at him; his foil struck S—— on the right breast, bent upwards, and broke about three inches below the button, and the broken point of the remainder of the foil, the jagged end of which is shown in the woodcut, passed on into and through S——'s neck,

pushing up the skin at the back of the neck, which rapidly formed a tumour there. He felt very little pain, thought it was merely a skin wound in front, but felt as though somebody else had given him a much harder blow behind. His adversary had withdrawn his foil, and recovered his guard as usual, without knowing that he had even scratched him. S—— walked into the dressing-room, showing no sign of faintness and not bleeding much. Finding there was no arterial hæmorrhage, I made gentle pressure with the finger for a short time till the bleeding ceased, when I sponged the wound, a ragged one, about three-quarters of an inch long, and brought the edges together with sticking-plaster, directed him to keep his head as quiet as possible, and not to bend or twist his neck. In half an hour from the time of receiving the accident there was a tumour at the back of the neck an inch in diameter, and projecting from a quarter to half an inch, probably caused by effusion of blood into the connective tissue under the skin, where it was torn by the end of the foil, which had forced the skin outwards without transfixing it. He progressed quite well. The wound in front healed by first intention. He had for two or three days a little stiffness in the neck; had no difficulty or pain in swallowing or breathing, no numbness either in neck or arm. I discontinued the sticking-plaster on May 6th, the wound being firmly united.

State on May 8th, when Mr. Nunn kindly examined him with me:—In the front of the neck there was the cicatrix of the wound, one inch from the median line, on the right side, about the level of the upper border of the thyroid cartilage. At the back of the neck, half an inch from the median line, on the same side, and two inches and a quarter above the spine of the seventh cervical vertebra, was a round swelling evidently produced by penetration of the foil almost to the extent of transfixion—that is to say, through the muscles up to the inner surface of the skin. There was some yellow discolouration in patches about the neck, not descending below the line of the clavicle. There was a little tenderness to pressure on the tumour at the back of the neck. There was no pain, numbness, or inconvenience anywhere else, nor were they producible by any movement.

Finchley-road, South Hampstead, N.W.

A Mirror OF HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. MARY'S HOSPITAL.

CASE OF TRAUMATIC TETANUS, TREATED SUCCESSFULLY.

(Under the care of Mr. SPENCER SMITH.)

FOR the notes of the following case we are indebted to Mr. W. V. Lindsay, house-surgeon.

William W——, aged twenty-seven, married, a joiner, was admitted at 9 P.M. on Nov. 9th, 1874. He stated that, fifteen days before, he trod on a nail, which ran into the ball of his great toe to the depth of half or three-quarters of an inch. He removed the whole of the nail at the time. As the toe was painful, he applied to the infirmary for relief, and was directed to bathe the part with hot water and to poultice it. After two or three days the toe and foot became more painful. On Nov. 5th he felt a pain in the back between the shoulders, which he described as similar to the pain of lumbago, to which affection he was subject; and at the same time his friends noticed that he had a peculiar smile. On the morning of Nov. 8th he felt an aching pain in the jaws along the back teeth, and he found that he could not open his mouth wide. On the following day the pain in the back and the pain and stiffness of the jaws were worse.

His condition on admission was as follows:—He could open his mouth to the extent of an inch between the edges of the incisor teeth, and he complained of pain between the shoulders as if a knife were being stuck in. This pain left him for a few minutes at a time during the course of the day. He had no pain in the jaws when he was taken into the hospital, unless he tried to eat anything. He was perspiring freely and felt hot. He had taken only some sago in the way of nourishment. Tongue clean; bowels last opened yesterday morning; pulse 100; temperature 99·6°. He had a small punctured wound on the ball of the great toe of the left foot. There was no redness anywhere, and no pain, except just at the wound when it was touched. He was ordered ten grains of chloral hydrate with ten grains of bromide of potassium every four hours, and beef-tea and milk.

Nov. 10th.—Slept well last night; is in much the same condition as yesterday. On introducing a probe into the wound, to clear out some of the linseed of the poultice, the patient complained of great pain in the back, which lasted about a minute. Pulse 82; temperature 99·9°. The chloral hydrate increased to fifteen grains every four hours. As his bowels had not been open since admission, he was ordered fifteen grains of calomel and jalap powder, to be followed in four hours by an ounce and a half of "house mixture."

11th.—Had a restless night, and complained of pain across the abdomen. Last evening, at 9 P.M., he had an attact of opisthotonos, lasting about three minutes, his head and neck being thrown back. During this time the pain in the back was very severe. He had two more attacks of the same kind this morning. He complained this morning of severe pain in the back and abdomen. The abdominal muscles were quite rigid; he could open his jaws about one

inch. On removing the poultice from the foot, he complained of severe pain in the back, and cried out with the pain. There was no redness about the wound on the foot. The attacks of pain in the back came on about every half-hour; respiration slow, and the chest-walls almost fixed; face flushed, and the skin perspired profusely. He took his beef-tea and milk well. Pulse 82; temperature 99·1°. Chloral hydrate increased to twenty grains every two hours. To have six ounces of brandy.

12th.—Passed a good night, and slept well. Has had no attack of spasm or pain in the back since yesterday afternoon; the adbominal muscles are still rigid and the ribs fixed; has no pain in the back when the foot or toe is touched; is taking nourishment well. Pulse 90; temperature 100°. The mixture to be taken every three hours; to have five grains of calomel with one drop of croton oil, to be followed in four hours by a compound senna draught.

15th.—Rather restless last night. Has had no return of pains or spasm till 6 A.M. this morning, when he had a spasm lasting about three minutes; during that time he became quite rigid and cried out. At 10 A.M. he had another spasm, rather stronger. The pain in the back and stiffness of the jaws are worse. He now complains of a continual pain in the left groin. Bowels confined; pulse 88; temperature 99°. Ordered castor oil; the mixture to be taken every two hours.

16th.—Had a spasm at 2 P.M. yesterday; has had none since. Slept well last night. Pain in back less; abdomen not so tense. Can move his jaws pretty freely, and open them better. Has no pain in the groin. The bowels have been well opened. Pulse 87; temperature 99°.

18th.—Had three spasms yesterday, each lasting about three minutes, and two or three during the night. The spasms are now coming on about every half-hour. His legs are quite rigid. The pain in the back and left groin is continual. He does not take his nourishment well. Tongue dry and brown. Is stiffer about the jaws. The pain in the back is increased when the foot is touched. As the bowels were confined, he was ordered some castor oil this morning; after which the bowels acted several times. Pulse 84; temperature 99·2°. Brandy increased to eight ounces; to have four eggs also.

19th.—Passed a quiet night. Has had only a few slight spasms since yesterday. Has pain in both groins, but not so severe. Can move his jaws fairly well. Is taking his nourishment again well. The bowels have been well opened, and he has felt better since. Tongue moist and cleaner than yesterday. Pulse 82; temperature 99·2°.

20th.—Had a severe spasm yesterday afternoon, lasting about half an hour. During this time he became quite rigid, cried out loudly, was flushed in the face, and bathed in perspiration. Had spasms when anyone went near him. Ordered subcutaneous injection of one-third of a grain of morphia. Soon after the injection he became easier, and the spasms ceased. Subcutaneous injection repeated at bedtime. To-day the spasms are less frequent and less violent; the legs are slightly flexed and rigid.

22nd.—Has had only two severe spasms since the 20th, which were relieved by subcutaneous injections of morphia. Has now but slight pain in the back; and feels pain and stiffness from both knees up to the groins. Is taking nourishment well, and continuing the chloral mixture every two hours.

24th.—Very much better; can move about freely. Has now but slight pain in the groin; the pain in the back has quite gone. Pulse 84; temperature 99·9°.

26th.—Has no pain anywhere. Slight feeling of stiffness about the jaws. Pulse 83; temperature 98·2°.

Dec. 4th.—Has continued improving, and sat up for eight hours to-day.

18th.—Discharged cured.

HOSPITAL FOR THE EPILEPTIC AND PARALYSED.

AUTOPSY ON A CASE OF HEMIOPIA WITH HEMIPLEGIA AND HEMIANÆSTHESIA.

(By Dr. HUGHLINGS JACKSON.)

IN our "Mirror" of August 29th, 1874, we reported a case of left (field) hemiopia with left hemiplegia and hemianæsthesia. The patient has since died. He died after a few days' illness, which, from his friends' account, presented no further definite local symptoms of nervous origin. His brain was examined by Dr. Gowers, who found but one lesion. It was, as was stated in our "Mirror" of August 29th to be probable, "in the hinder part of the thalamus opticus." Dr. Gowers, who did not know the history of the case, also made a diagnosis of hemiopia—a retrospective diagnosis from his examination of the brain. His report is as follows:—

"The right optic thalamus presented a considerable depression over its posterior half, where it was much softer than that of the opposite side. On section the tissue was seen to be softened, greyish-yellow in tint. The amount of softening was greatest on the inner side, the posterior tubercle (pulvinar) being broken down and destroyed, and here the softening extended up to the ventricular surface. It did not extend beyond the limits of the thalamus into the white substance of the hemisphere or the crus, and the anterior half of the thalamus and posterior extremity of the corpus striatum were intact. The microscopic characters were those of simple softening. The vessels at the base were moderately atheromatous; no occluded vessel near the softened area could be discovered. Convolutions healthy. No disease elsewhere."

REMARKS ON CASES OF HEMIOPIA WITH HEMIPLEGIA.

(By Dr. HUGHLINGS JACKSON.)

Hemiopia is not, Dr. Hughlings Jackson thinks, so rare a nervous symptom as is commonly supposed. This and the following remarks only apply to cases seen in physicians' practice, and therefore to hemiopia associated with other nervous symptoms. It occurs most often with hemiplegia. Dr. Hughlings Jackson has seen eleven cases of this kind. Significantly the association is such that the patient cannot see to his paralysed side. To this rule Dr. Hughlings Jackson has seen no exception. He has now two patients in the London Hospital who are hemiplegic on the left, and who have lost sight entirely in their left "fields." They have been carefully examined by Mr. Couper.

The hemiopic patient in the street runs up against people; when going out of a room he strikes his hand against the door-post; he pushes glasses off the dinner-table. Hemiopia is more especially incapacitating when it is right-sided (field), as we read and write from left to right. It is discovered in some cases of partial aphasia, but is easily overlooked. In such cases the patient's writing, or rather attempts at writing, are a series of lines begun from the left and ending on the right, after a few syllables or syllable-like scrawls. Hemiopia was discovered in one of the two hemiopic patients in the hospital because he read words of the test-types on the right side of the page only. At that time it was difficult to investigate his case on account of a mental defect which Dr. Hughlings Jackson calls "imperception." It was very difficult to explain to him that he could read from the left side of the page by holding his book in a properly-adapted position.

Such cases, Dr. Hughlings Jackson thinks, disprove the recent assertions as to the total decussation of the optic nerves in man.

BRADFORD INFIRMARY.

HÆMORRHAGE INTO THE PONS VAROLII.

(Under the care of Dr. ALEXANDER.)

IN the "Mirror" of Feb. 6th, p. 196, we published the notes of a case of hæmorrhage into the pons Varolii, to which it will be interesting to refer in reading the following notes.

Maria B——, aged fifty-four, married, bookfolder, was admitted on the afternoon of Feb. 1st, 1875, with the following history. She had been married twenty-one years, and had had three children. She had been a temperate woman, and had enjoyed good health, although of late years, and especially during the last two, she had suffered from pretty frequent pain at the back of her head. About two years ago she had a slight attack of hemiplegia. She went to bed in her usual health, but awoke in the morning to find her left leg slightly palsied. She was walking about in a

day or two, and there was no trace of the attack at the end of a week.

On the afternoon of Jan. 31st, 1875, she set out on a visit to some friends at a considerable distance from her house. Her friends being absent, she did not get the rest and refreshment she expected and needed, and when she reached home in the evening she was hungry and exhausted, and made a hearty supper, but remarked that she did not feel well. About 9 o'clock P.M., whilst seated in a chair, she suddenly exclaimed "Oh, my head!" A friend in the room hastened to her, and noticed that her face was drawn to the left side, that her speech was thick and imperfect, and that her left arm and leg were paralysed, but there was no loss of consciousness.

On admission she was in a helpless and exhausted condition. There was inability to move the left arm and leg; but sensation was not wholly lost, for when her arm was well pinched she cried out and thrust it down. The fingers were somewhat flexed, and when straightened gradually contracted. When the skin of the leg was pinched, the leg was slightly drawn up. There was well-marked facial paralysis on the right side. The right cheek was full, smooth, and flaccid; whilst the left was somewhat drawn and furrowed. The left angle of the mouth was slightly raised. The tongue was protruded with difficulty, and to only a short distance; it was tremulous, turned to the right side, and loaded with white fur. She was not able to open her mouth far, and when she did open it the left angle of the mouth took the larger share in the action. When she blew, the lips opened more on the right side than on the left. There was a copious overflow of saliva from the right side of the mouth. Her speech was very inarticulate. She was an intelligent woman, and seemed to have no difficulty in finding suitable words to express her wants; but her articulation was so clumsy that it was very difficult, and frequently impossible, to understand her. The pupils were equal, of normal size, and contracted on exposure to light. She could not perfectly close the right eye; and, when told to raise her eyebrows, the right half of the forehead was smooth, while the left half was corrugated. There was no appreciable impairment of sensation on the right side of the face. There was distinct difficulty of deglutition. When a little milk was given to her, most of it found its way back over the right side of the mouth. The skin was moist; the bowels were constipated. She was very drowsy, and complained of pain in the lower occipital region. The pulse was of moderate volume, but somewhat peculiar, being more frequent than normal for a while and then becoming slower. It was impossible to ascertain the exact condition of the heart on account of the loud sonorous rhonchi heard all over the front of the chest. Temperature in the evening 99·5; respiration increased in frequency. Twenty-four ounces of highly acid urine were drawn off; sp. gr. 1028; copious deposit of urates; no albumen.

Feb. 2nd.—Says she feels worse; pain at the back of her head is more severe; face is flushed, hot and turgid. Pulse 126, regular and hard.—Evening: Pulse 121; temperature 100·4°. There is loud gurgling in throat.

3rd.—Face is no longer flushed, but moist and dusky; no remission of pain at the back of her head; can close right eye, but not so closely as left eye; there are loud sonorous rhonchi over the whole of the front of chest, with moist râles in right mammary region, and slight dulness and want of elasticity at right apex. It is inexpedient to examine the posterior parts of lungs, on account of her helpless and exhausted condition. She coughs occasionally, with loud rattling noise in throat. When the left arm or leg is firmly pinched she does not move either, but manifests her sense of the pain by moaning and contorting left side of face. Pulse 138, and feeble; temperature in right axilla 101·4°; in left axilla, 102·2°; respiration 54.—9.45 P.M.: The respiration is less noisy, 56; pulse 134; temperature on right side 101·1°; on left 101·7. Eighteen ounces of urine drawn off, having about the same characters as before.

4th.—Pulse 122; temperature (right) 99°, (left) 100·3°; respiration 51.—Evening: Pulse 122; temperature 100·2° on both sides. Left leg was found drawn up, and there was considerable resistance in straightening it; right conjunctiva injected and eyeball smeared with whitish film.

5th.—Pulse 133, soft and feeble; temperature 100·3° on both sides; respiration 39. She can open her mouth wider, put out her tongue further and to either side, and her articulation is much more distinct; she is very restless, throwing her right arm about and tossing the clothes off her.—Evening: Pulse 144; temperature 102° on both sides; respiration 58. She died at 10.30 A.M. on the 6th Feb., four days seventeen hours and a half after admission.

The diagnosis was, a clot in the right lower half of pons Varolii.

At the autopsy, made fifty-six hours after death, the arteries at the base of the brain were found to be in a highly atheromatous condition, being hard, irregular, and knotty. On section of the larger atheromatous deposits, they could be squeezed out of their beds and broke with a hard, gritty fracture. One branch contained a hard, white, old clot, about an inch long, and completely filling its canal; and attached to this was a long, soft, coloured, recent thrombus. On the posterior inferior surface of the right half of the pons Varolii a small clot was seen presenting. On making a section, the clot was found to occupy *the right lower half of the pons, not extending beyond the median line.* The clot was soft, of the consistence of jelly, of almost black colour, and striated with disintegrated nerve-substance. The surrounding nerve-substance appeared healthy. The fourth ventricle was intact, and there was no abnormal appearance in any other part of the brain. On opening the chest, the heart was found to be almost completely concealed by the overlapping, emphysematous, anterior edges of the lungs. Its weight was 12½ OZ. The right auricle was larger than normal. The commencement of the pulmonary artery was occupied by a tolerably firm clot. The walls of the left ventricle were thickened and of firm consistence. The posterior segment of the mitral valve was small, and its attached border was beaded with large, hard, warty excrescences, on which were slight fibrinous deposits. The anterior segment was large; both its attached and free borders were studded with similar warty vegetations, on which also were traces of fibrine. The aortic valves exhibited slight atheromatous deposits, as also the interior of the commencement of the aorta. The sinuses of Valsalva were deeply pouched. The orifice of the left coronary artery was wide and gaping, and the artery was so thickened as to be almost occluded within three-quarters of an inch of its orifice, the nearly occluded portion being three-eighths of an inch long; anterior to this the artery was dilated. Both coronary arteries were more or less ossified throughout their course, and cut with a hard, gritty section. There were slight recent adhesions of the posterior part of the right pleura. The anterior edges of the lungs were emphysematous; the right lower lobe was in a state of incomplete red hepatisation; the left lower lobe was congested. The bronchial tubes, even to the smaller ramifications, contained purulent fluid. The remaining organs were healthy.

Remarks.—The diagnosis was made, and the death occurred, before the appearance of Dr. Crichton Browne's paper. The diagnosis of clot in the right lower half of the pons Varolii was warranted by—(1) the complete facial paralysis of the right side, with paralysis of opposite arm and leg; and (2) the very imperfect articulation. There was no contraction of the pupils, nor were any of the other symptoms present in Dr. Browne's case noticed in this. The head and face were moist with perspiration, but the perspiration was not copious. The interrupted breathing, the intermittent pulse, and the emotional incontinence were all absent. The old clot in the arterial branch above described might explain the former transient hemiplegia, but through inadvertency it was not noticed to which part of the base of the brain the artery corresponded.

WIGAN MEDICAL SOCIETY.—The second monthly meeting of this Society, being the first after the adoption of the rules, was held in the Public Hall, Wigan, on the 6th inst., when Dr. Kellett, of Newton-le-Willows, read a paper on a "Case of Emphysema," in which he advocated the theory of the possibility of air being secreted by serous membranes and subcutaneous cellular tissue. The following members took part in the discussion:—The President (Mr. White), Messrs. Shepherd, Barnish, Monks, Latham, and Fairbank. Mr. Barnish kindly exhibited during the evening microscopical specimens of pathological subjects. The Society bids fair to be a success, and will do much to establish a good feeling amongst its members.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

THE last ordinary meeting of this Society for the session was held on the 18th inst.; Mr. Geo. Pollock, President, in the chair. It will be seen that a large number of specimens were exhibited, but owing partly to the absence of some exhibitors whose specimens had been announced, and to the brevity which, at the suggestion of the President, characterised the communications to the Society, the business of the evening was satisfactorily completed. At the conclusion of the proceedings, the President called the attention of the members to the desirability of sending in their papers without delay.

The first subject was a Report of the Committee on Morbid Growths, by Drs. Fagge and Goodhart, upon Mr. Bryant's case of Cancerous Stricture of the Rectum (*vide* p. 50). The report described the characters of the growth, which were those of true cancer, and from its distribution and the fact of the internal surface of the bowel being less involved than the outer coats, it was concluded that the growth had arisen in the subperitoneal tissues and the ovary, implicating the rectum by extension.

Mr. ARNOTT read the Report of the Committee on Morbid Growths signed by himself and Mr. Beck, upon Mr. Wood's specimen of Tumour of the Scapula (p. 406). The growth was very vascular and difficult to classify, being mainly composed of delicate spindle and round cells infiltrating the muscles and fat, while in some parts distinct alveoli, similar to those met with in cancer, were found; the contained cells were, however, more uniform in size (being smaller and round) than in carcinoma; there was much intercellular material, and the margins of the alveoli were ill-defined. Hence it was concluded to be a spindle-celled sarcoma, containing numerous round cells, due to its rapid growth. A report by the same gentlemen on Mr. Wood's tumour from the zygomatic fossa (p. 406) was also read. The tumour was a pure myxoma containing fat.

Mr. GODLEE then showed a specimen of Blood-cyst in Sarcoma, which was removed from the outer part of the leg, where it had been growing since last spring. Before removal it measured three inches in diameter, was well defined, and its lower part of a deep purple colour, a bloody fluid exuding from two patches. A drachm or two of blood escaped on its being incised, and some material like blood-clot turned out of the cyst, the wall of which was lined by similar but denser substance. The cyst was superficial to the deep fascia. The contents proved to be a spindle-celled growth, the fasciculi of which were separated by hæmorrhages. The specimen differed from those exhibited during the last two years by Messrs. Holmes and Lawson in the new growth not being limited to the wall of the cyst.

Mr. ARNOTT showed, for Dr. Curran, of the Indian Army, a specimen of the Crop of a Duck filled with large nails, of which no fewer than seventeen were found in the crop.

Dr. CRISP showed some recent specimens of Tubercle in Pheasants.

Dr. DUKA showed a specimen of Dry Gangrene of the Lower Extremities, removed from a young Hindoo woman in the seventh month of her first pregnancy. There was complete mummification of both feet and legs up to the knee-joint. Both limbs were amputated; there were no vessels requiring ligature; only slight oozing. Antiseptic dressings were applied, and the patient made a good recovery, giving birth to a child, which only lived for three months. Six years later the patient was alive and well. Was the gangrene determined by the condition of the blood in pregnancy, or by change in vessels? Whatever it was, both popliteals must have been plugged; and the gangrene came on at the same time in each extremity. Had it been due to malarial poisoning the patient could not have survived.

Mr. FAIRLIE CLARKE related the further history of a case of Prolapsus Linguæ, which he had brought before the Society three years ago. The child, who was but six months old when the redundant portion of the tongue was removed, was now fine, strong, healthy, and intelligent; the tongue, which habitually showed between the teeth, could be kept within the mouth; the teeth were regular and upright. Speech was thick and indistinct. He believed this to be the only case in this country in which operation had been performed at so early an age. There was one recorded by Meyer of Breslau. — Mr. WAGSTAFFE asked what was the nature of the growth and the method of operation. Also what was the child's intellectual condition; for he had a similar case under his care in a child showing a tendency to idiocy, in which the tongue was diminishing in size. — Mr. CLARKE replied that the protruding portion of tongue, an inch and a quarter long, was removed by the wire écraseur. He referred to Mr. Arnott's drawing of the microscopical appearances in a similar case. There was no tendency to idiocy.

Mr. FRANCIS MASON showed a specimen of Lymphadenoma in the Sacral Region. The child, sixteen months old, had suffered from scarlet fever four months previously, and was the subject of albuminuria when the tumour was detected behind the rectum. The child died comatose; and after death a large lymphadenomatous tumour was found filling up the pelvis between the rectum and sacrum.—Mr. Mason also showed a living specimen of sacral tumour.

Dr. CRISP showed a specimen of Softening of the Cerebellum, limited to the left lobe; and a Cavity in the Apex of the Lung lined with Calcareous Deposit. He also related a case of Purulent Pericarditis in which the pericardial sac contained twelve ounces of pus.

Mr. MAC CORMAC showed a specimen and drawing of a case of Dislocation of the Astragalus, from a subject whose leg had been amputated for disease of the knee-joint. The dislocation dated from two years, and was due to a fall from a railway train. It had been treated as fracture. There was very little deformity, and the patient walked about with the aid of a crutch; he could go up ladders and travel across scaffolding with ease. On dissection the head of the bone was found to be still in contact with the scaphoid, but the rest of it was displaced backwards from between the malleoli, the tendo Achillis adhering to this surface, and the other tendons passing over the sides of the displaced bone. A similar case was under the care of Mr. Le Gros Clark in 1863, and he (Mr. Mac Cormac) had recently seen this patient, who could walk well, and who exhibited marked prominence at the back of the foot of the dislocated astragalus. It was remarkable that so little inconvenience was occasioned. He had only found one case in which it was necessary to excise the bone. In answer to the President, Mr. Mac Cormac said that there was very considerable movement at the ankle-joint, attended by rough crepitation.—The PRESIDENT said that a few years ago he had paid much attention to the injuries of the astragalus, and had concluded that dislocation without fracture was very rare.—Mr. DE MORGAN, in response to the invitation of the President, stated that he remembered a case under Mr. Arnott's care some years ago where the bone had to be removed for sphacelus of the skin, also a case under Mr. Shaw where there was no evidence of fracture. He himself had a case lately of backward dislocation of the astragalus without fracture; it was readily reduced.—The PRESIDENT had met with three cases in which there was apparent displacement of the astragalus from the foot having slipped to one or other side; in these cases there was sloughing of skin; in two amputation was performed, and in the third partial excision of astragalus. Sloughing of skin almost invariably follows if early reduction be not effected.

Mr. ARNOTT showed the parts from a case of Colloid Cancer of the Rectum two years after colotomy. The patient was a schoolmistress, twenty-seven years of age, who came under his care in February, 1872, with symptoms of rectal disease dating from two years. Examination showed the walls of the bowel to be infiltrated with hard material, converting it into a rigid tube. Colotomy was performed with great relief, and but little inconvenience, the patient returning to her employment. Menstruation occurred in November, having been absent two years. In the summer of 1873 the cancer had grown outside the anus, and converted the perineum into a solid mass of ground-glass-like material; there appeared to be entire obstruction, and but little bleeding. She survived the operation

two years, the last months of her life being marked by gradual progressing œdema of lower limbs and trunk, due to the gradual involvement of the retro-peritoneal glands. The whole of the perineum, part of the vulva, and the bowel up to within an inch and a half of the artificial anus, were converted into a fine cartilaginous-looking mass, having the histological characters of colloid cancer. The glands in front of the spine and around the uterus, together with the lymphatics over each ovary, were infiltrated with colloid cancer.

Mr. LAWSON showed a specimen of Melanotic Sarcoma from the Orbit, which was of interest from the fact of its having arisen in an eye previously lost from injury inflicted twelve years before. The growth filled the orbit, causing protrusion of the eyeball; it also invaded the eye between the detached retina and sclerotic. It was spindle-celled.

Dr. GOODHART showed two specimens of Annular Constriction of the Aorta, the constriction commencing just below the origin of the left subclavian artery, where the ductus arteriosus opens into the aorta. Both subjects were males, aged respectively seventeen and thirty-seven years. In each the symptoms were those of general dropsy and albuminuria of three months' duration. In both there was a systolic bruit at the apex of the heart—in one a post-systolic bruit, and in the other on one occasion a murmur like a pericardial rub. Collateral circulation was carried on by means of the internal mammary, epigastric, and superior intercostal arteries. The cases at first sight seemed opposed to the view as to the dependence of atheroma upon strain, for in only one was there any atheroma of the arch of the aorta, and that to a very slight extent. This absence of strain was probably due to the existence of mitral regurgitation, for in both the aortic and mitral valves were thickened from endocarditis; with vegetations in one case. There was evidence of chronic inflammation about the aorta at the entrance of the ductus arteriosus, which had probably been the starting-point of the constriction. In one case a small dissecting aneurism was in process of formation at this point.

Dr. GOODHART also showed a specimen of Spontaneously Cured Aortic Aneurism from a male forty years of age. There was hemiplegia and gangrene of the lower limbs. No history of syphilis. Symptoms dated from nine weeks. The patient died from exhaustion and cystitis. The aneurism sprang from the left side of the abdominal aorta, and was filled by laminated clot, which extended into the mesenteric arteries. No enlargement of anastomotic channels.—Mr. MORRANT BAKER inquired what was the condition of the pulse in the radials and in the lower limbs in the case of contracted aorta, referring to the case brought before the Clinical Society at its last meeting by Dr. Broadbent, in which absence of radial pulse was shown to depend upon constriction of the orifices of the innominate and subclavian arteries.—Dr. GOODHART replied that in both cases the radial pulse was recorded as being quick and small.

Mr. MORRANT BAKER showed a specimen of Hernia Testis removed from an infant eighteen months old. Two weeks after birth the left testis was noticed to be larger than the right, and three months before admission the scrotum became red and tender. An abscess formed, and hernia testis followed. This was removed, and microscopical examination showed strumous disease of the organ. Its interest lay in the youth of the subject.

Dr. DUCKWORTH showed Organs from a case of Acute Tuberculosis in an infant eight months old. The child was brought in dead from extensive pericardial effusion. There was enlargement and caseation of the bronchial glands, miliary tuberculosis in lungs and other viscera, including the spleen (both on surface and in interior), but none on pia mater or peritoneum.—Dr. GREEN thought that acute tuberculosis was not very rare in infants; he had recently examined a case seven and a half months old.

The meeting then adjourned.

CLINICAL SOCIETY OF LONDON.

THE ordinary meeting of this Society was held on the 14th inst., the chair being filled by Sir W. Jenner. Mr. Hutchinson, who had been unable to bring forward the case previously announced, gave a long and interesting exposition of the etiology of Hydroa; this was followed by a remarkable case of acute fatty degeneration of the heart by Dr. Green, and an equally remarkable case of absence of pulsation in both radial arteries, with fulness of the vessels, by Dr. Broadbent, in which the cause of the phenomenon was clearly demonstrated. Lastly, Dr. Evans brought forward a case of dilated heart with adherent pericardium, in which the right ventricle was tapped in error, without harm, but with marked relief. This case excited some discussion, and did good in showing that many other cases had occurred in practice which have not been put on record.

Mr. JONATHAN HUTCHINSON made some remarks upon the various Skin Eruptions classed as Hydroa, illustrating them by numerous drawings and a beautifully executed wax model. The name "hydroa" was first applied by Bazin to certain vesicular or bullous eruptions, examples of which Mr. Hutchinson had seen for the first time when in Paris ten years ago, and he had described similar cases about six years ago in a series of papers which he had published, but had not then been enabled to trace them to their true cause. The eruption of bullæ or vesicles surrounded by a zone of erythema is characterised by its sudden onset, symmetrical distribution, and spontaneous curability. It seldom persists long, but its duration is variable. Bazin had pointed out its spontaneous resolution as distinguishing it from pemphigus. It might be confounded with variola or syphilis, but it presents different appearances at different stages. Bazin had noticed in a few cases a tendency to rheumatism, but in many he could assign no cause for the eruption. This cause Mr. Hutchinson was enabled to say, after five years' observation, was in the majority of cases to be found in iodide of potassium, and it was singular that it should have been so long overlooked. If so, this association with the drug was very important, for the eruption often simulated a syphilitic character, and had doubtless been frequently treated with the iodide to which it was really due. He then adverted to the kinds of eruption generally produced by the bromide or iodide of potassium; many simulating acne and lichen; one such, called "confluent acne" by Dr. Cholmeley, occurred in a child who had been taking the bromide; it was not bullous. Then there are other more severe eruptions—vesicular and bullous—due to these drugs; and drawings were shown in which the eruption was seen to be very multiform, in places looking like inflamed spots of acne, in others tending to become bullous, and in other parts pustular and ulcerative. A married woman suffered from numerous and large cutaneous ulcers, almost confluent, which were thought to be syphilitic, and, an obscure history of syphilis being obtained, she was prescribed iodide of potassium. The ulcers, however, extended, and the condition of the patient became very critical, when, Mr. Tay suggesting that they might be due to the drug, this was discontinued, and the patient recovered. In another case of hydroa the eruption covered the face and arms. There was no suspicion of syphilis, and only simple salines were given. The man went out well in two days. It was learnt that he had had some slight rheumatic pains before the eruption occurred, and the patient attributed its appearance to some medicine he had taken. Mr. Hutchinson published the case, but it did not then occur to him that in all probability the man's statement was correct, the medicine being iodide of potassium. Again, a young woman presented an extensive symmetrical eruption of bullæ, not in the irregular groups of pemphigus or herpes, and somewhat resembling a bullous syphilide. Iodide of potassium was given without effect, and on its being discontinued the eruption subsided. The drawing from this case precisely resembled those in which the eruption was known to be produced by the drug. But there are other cases in which this relation is wanting; and a wax model was shown of the arm of a young man, twenty-one years of age, where the bullæ were surrounded by much erythema. The patient said that he had been subject to similar attacks every year since boyhood, and they were always associated with slight digestive derangement.

Such cases might be due to some article of diet, or to other drugs than the bromide or iodide—e. g., purgatives. A drawing of a case of "vesicating erythema" was shown; it presented a large erythematous area upon which were seated a number of vesicles. Hydroa had most affinities with erythema multiforme and urticaria, especially resembling the latter in its occasional occurrence from articles of diet, &c. Indeed a rare form of urticaria—viz., U. bullosa—has been described, which is probably identical with hydroa. The name "herpes iris" has been applied to the affection by some. In conclusion, Mr. Hutchinson stated that the recognition of iodide of potassium being a possible cause of the eruption was very important; and he pointed out that the liability to the eruption and its extent were not proportional to the dose of the drug taken.—The PRESIDENT inquired if the contents of the bullæ had been tested for the iodide; since, in cases of salivation from the drug, much of the salt occurred in the saliva. He also asked if "vesicating erythema" was due to iodide of potassium.—Mr. HUTCHINSON replied in the negative to both questions.—Dr. TILBURY FOX, although agreeing with Mr. Hutchinson in his description of hydroa, said that he had seen several cases in which there was no evidence at all of the patient having taken the iodide. Indeed, in some the eruption occurred suddenly, when no medicine of any kind was being taken. He thought the hydroa of Bazin and similar diseases were more allied to pemphigus than any other affection. He had seen it occur associated with crops of herpetic vesicles and with large bullæ of pemphigus. One such case occurred in a lady debilitated from fever in India. He had seen one case in which it commenced with urticaria.

Dr. GREEN read notes of a case of Acute Fatty Degeneration of the Heart. The patient, a female aged sixteen, unmarried, and a machinist by occupation, had a severe attack of scarlet fever five years ago, not followed by dropsy. Three years ago she was for a short time an in-patient at the Middlesex Hospital suffering from shortness of breath and debility. She was admitted into Charing-cross Hospital under Dr. Green's care on November 24th, 1874, having been previously attending, for a few weeks, as an out-patient for slight rheumatic pains. She was tall, of delicate build, badly nourished, and anæmic, complaining of articular and precordial pains, and shortness of breath on exertion. There was evidence of slight enlargement of the right ventricle, and of mitral contraction and regurgitation. There was cough with scanty expectoration; once or twice a small quantity of blood; pain and nausea after food; occasional vomiting; slight albuminuria; no œdema. She was ordered full diet, alkalies, and nux vomica. On January 13th she was much better; had been out of bed for a long time, and was on the point of being discharged, when the catamenia (which had been absent since the beginning of November) reappeared on the 14th, with malaise and vomiting. The menstrual discharge became profuse, vomiting persistent and uncontrollable, great anæmia and prostration, pulse small and frequent, the case terminating fatally on the 17th, or four days from the onset of symptoms. On post-mortem examination the pericardium was found to be natural; the heart weighed 13¾ oz.; right ventricle and left auricle dilated and thickened; the left ventricle slightly enlarged. The mitral orifice was contracted and funnel-shaped, admitting the forefinger. The muscular tissue of the heart was uniformly soft and friable, and, microscopically, was found to be in an advanced stage of fatty metamorphosis, the fibres being loaded with molecules soluble in ether. The aorta was much narrowed, especially beyond the arch; its lining membrane showed a few small fatty patches. Several of the voluntary muscles were also fattily degenerated, especially those of the limbs and the recti abdominis. The lungs, liver, and spleen were indurated from chronic congestion. Dr. Green remarked upon the rapid way in which exhaustion and death supervened, without any inflammatory complications. The patient was enjoying fair health, the heart acted well while she was kept quiet and being well fed, until the occurrence of profuse menstruation led to the rapid failure of cardiac power. This failure must have been due to the fatty metamorphosis of the heart. This metamorphosis is attributed to deficient supply of oxygen to the tissues; and here anæmia was present, the anæmic condition being materially increased by the loss of menstrual blood and the inability to retain food, so that although there was probably some degeneration before, it was rapidly increased. The arterial circulation was defective from diminution in the arterial tension, due to the mitral stenosis, this being evidenced by the narrowed aorta. Ponfick (*Berl. Klin. Wochensch.*, 1873) has recently described a condition of fatty degeneration of the heart obtaining in chronic hydræmia and anæmia, in which the blood is fluid, of a dull dirty-red colour, with deficiency in red corpuscles and fibrine. Could the acute degeneration in the present case have been prevented? If transfusion had been early had recourse to, would that have saved the patient from immediate death?—The PRESIDENT asked if the coronary sinus had been examined, as he thought the condition of the veins of the heart of some importance in occasioning defective nutrition.—In reply to Dr. SOUTHEY, Dr. Green stated that the pulse was feeble, and that the patient did not suffer from fainting. For some time previous to the fatal attack the patient had few cardiac symptoms.

Dr. BROADBENT read notes of a case of "Absence of Pulsation in both Radial Arteries, the vessels being full of blood." The patient, a labourer, fifty years of age, was admitted into St. Mary's Hospital on May 2nd, 1874, suffering from ascites, bronchitis, and emphysema. He had formerly been a sailor, intemperate, and the subject of syphilis. Paracentesis abdominis was performed three times, and he left the hospital a month after admission, returning again in three weeks' time with recurrence of the ascites, which was due to hepatic cirrhosis. He remained in the hospital until January of the present year, tapping having been practised fourteen times. No pulse could be felt at either wrist, but the radials felt full of blood, and could be rolled under the finger; when the arm was raised the blood receded, and the arteries collapsed. Occasionally a faint pulsation could be found in the left radial. The hands were warm; muscular condition good. The patient averred that the absence of pulse dated from a strain received thirty years ago. There was no pulsation in the subclavians, but it was present in the left carotid, although feeble in the right; the femoral pulse was feeble. The heart was normal; its pulsations vigorous. There was no cardiac murmur, and no evidence of aneurism or intrathoracic tumour. No explanation could be afforded for the phenomenon, and the man was kept under observation in the hope that it would eventually be made manifest. Dr. Broadbent remarked that he had met more than once in intrathoracic aneurism with a full artery in one or other arm without pulsation, and the absence of pulse in both upper limbs pointed to some condition of the aorta in the present case. The patient died one week after leaving the hospital, and an examination of the body was fortunately obtained. The right ventricle was enlarged; there was no valvular disease. The aorta was slightly enlarged, but showed very little change in its lining membrane, retaining its normal elasticity. But there was close approximation of the orifices of the innominate and left carotid, the former being much narrowed and rigid from atheroma; the vessel immediately above its origin assuming its normal size and elasticity. The left vertebral artery sprang from the aorta close to the subclavian, the orifice of which was narrowed and rigid from atheroma. Thus the absence of pulsation in the two limbs was due to two separate lesions. It is obvious that constriction of the orifices of these vessels would cut off the arteries from the general expansile movement of the aorta, the blood-stream being rendered more or less continuous by the elastic pressure of the aorta, on the same principle as the elastic ball acts in the spray-producer. The proximity of the left carotid to the innominate, and the abnormal origin of the left vertebral close to the left subclavian, favoured this constriction, and the atheromatous condition of the orifices was due to the presence of constriction plus the strain from the blood-pressure, which must always be most marked where the vessels arise from the aorta.—In reply to Mr. Morrant Baker, Dr. Broadbent said that on one occasion an attempt was made without success to obtain a sphygmographic tracing of the pulse.

Dr. G. H. EVANS then read notes of a case of Dilated Heart from Valvular Disease; right ventricle tapped by error, not only without harm, but with relief of symptoms. The patient was a female twenty-seven years of age, admitted into hospital on Feb. 23rd, 1875, suffering from subacute rheumatism and dyspnœa. Three years previously she had an attack of rheumatic fever, and about six years

ago she was in hospital for some cardiac affection, when leeches and blisters were applied to the precordium. The area of the cardiac dulness was increased, extending from the second interspace above, and laterally from beyond the right border of sternum to outside the left nipple, the apex beat being in the fifth interspace, a little without the nipple line. Murmurs both at base and apex. Blistering and leeches were applied on the 24th, but on the 26th there was great extension of dulness, which nearly reached the right nipple, marked bulging of chest wall, excessive dyspnœa, pleuro-pneumonia at base of right lung. On consultation it was decided to perform paracentesis pericardii, and accordingly a fine trocar and canula were inserted by Mr. Hulke to the depth of about half an inch in the fourth interspace, about half an inch to the left of sternum. The withdrawal of the trocar was followed by the jetting of dark blood, and the instrument was felt to be moved with the heart's action. The canula was at once withdrawn, not more than a drachm of blood having escaped. The patient was apparently relieved by the operation, and passed a better night after it. There was no increase in the cardiac dulness after the operation, but in a few days this began notably to diminish. On March 3rd it began above at the third cartilage, and did not reach beyond the right border of the sternum. The patient, however, sank from failure of the heart's action and pulmonary engorgement, dying on March 23rd. At the autopsy there was found a universally adherent pericardium, dilated hypertrophy of the heart, and incompetency of the tricuspid, mitral, and aortic valves. No trace of cicatrix could be seen at the site of puncture in the pericardium or in the wall of the heart, a minute cicatrix on the skin alone showing where the operation had been performed. There was pleurisy with effusion on the right side, extreme engorgement of the lungs, and induration of other viscera. Dr. Evans said that the case illustrated the difficulty of diagnosis between pericardial effusion and distended heart; and the rapid increase in the dull area, the bulging of chest, and muffling of the cardiac sounds had pointed in this case to the presence of fluid. It showed also that the right ventricle might be punctured not only with impunity, but with relief; for there could be no doubt that the ventricle was punctured, and a small quantity of blood withdrawn, the patient rallying almost from a moribund state and living for four weeks.—The PRESIDENT asked if there was no trace of a cicatrix at all.—Dr. EVANS said that a most careful search was made for a cicatrix in the heart wall, but without success.—Mr. HULKE said that there could be no doubt that the trocar did penetrate the ventricle, because it oscillated with the movements of the heart. The practical lesson is that the safer method of operation is not to *plunge* in the trocar, but, having connected it with the exhausted chamber, to push it in slowly. Thus it is possible to stop the moment the fluid flows, and to prevent the trocar going unnecessarily deep. The former mode was adopted in this case, and he had chosen a spot about the centre of the dull area, sufficiently far from the border of the sternum to avoid the internal mammary artery, and also sufficiently far from the heart's apex. He was much concerned when, on withdrawing the trocar, blood spurted out. Dr. SOUTHEY related a case in which death ensued in a few minutes after the puncture, the pericardium being distended with blood. The operator had felt the trocar move with the ventricle.—The PRESIDENT pointed out that it is not the puncture of the heart that kills, but the pressure of blood on the outside of the heart.—Dr. BROADBENT thought it was manifest that relief could not be due to the escape of so small a quantity of blood; it was more probable that the puncture had stimulated the right ventricle to increased vigour, which enabled it to get rid of its contents. He had been informed of a case in which the right ventricle had been tapped by means of an aspirator, with relief.—Dr. YEO had seen a case in which the ventricle was punctured in error. The patient (a child) lived some weeks after the operation. A scar was found in the substance of the heart. In reply to Mr. Hulke, Dr. Yeo stated that the pericardium was not adherent.—Dr. FARQUHARSON mentioned that a few years ago he had brought a case of knife-wound of the heart before the Medical Society. Here intense pericarditis was set up.—The PRESIDENT, referring to Dr. Broadbent's remark, thought that the escape of two drachms of blood from the right ventricle would relieve its over-distension.

The meeting then adjourned.

Reviews and Notices of Books.

A Memoir of the Lady Ana de Osorio, Countess of Chinchon, and Vice-Queen of Peru (A.D. 1629–39), *with a Plea for the correct spelling of the Chinchona Genus.* By CLEMENTS R. MARKHAM, C.B., F.R.S. pp. 99. London: Trübner and Co. 1875.

To the Lady Ana de Osorio, Countess of Chinchon and Vice-Queen of Peru, Europe is indebted for its first knowledge of quinquina bark. She herself had happily been cured of a tertian fever in Peru by the use of the bark, and on her return to Europe, in 1640, she brought with her a quantity of the inestimable medicine. A hundred years passed before it became possible to describe scientifically the plants from which the bark of barks was obtained, and it was not until 1742 that this honourable task fell to Linnæus. He, desirous to perpetuate the memory of the noble lady who had first made the wonderful properties of the bark known, proposed to name the new genus to which the plants belonged after her. By an unfortunate orthographical mischance, however, he wrote the word "Cinchona" instead of Chinchona, and so the name has remained to the present day—an arbitrary term in effect, instead of a word at all times recalling the name of a great benefactress. Another hundred years and more have passed since this vexatious error was committed, and now Mr. Clements Markham comes forward to protest against the continuance of this orthographical injustice. He does this in the dainty volume now before us, preceding his argument with an account of the family of the Osorios, of the life of the Lady Ana de Osorio, of the Counts of Chinchon, of the fourth count, the Viceroy of Peru, and second husband of the Lady Ana de Osorio; and, lastly, of Chinchon, in the province of Madrid, from which place the Counts of Chinchon took their name. He then considers the naming of the Chinchona genus and shows that the error of Linnæus's spelling was pointed out and corrected by the Spanish botanists Ruiz and Pavon in 1778, the year of the great Swedish naturalist's death, and that from that time to this there have not been wanting botanists who have preferred good to bad orthography. For example, of the different botanical authorities who have visited the Chinchona forests and have written on the genus, it would appear that eight have written the name correctly (Chinchona), and seven, according to custom, incorrectly (Cinchona). Having thus shown that he does not stand alone in his protest, Mr. Clements Markham proceeds to sum up his arguments for correct spelling; and the first of these, it might be presumed, was all-sufficient—namely, that "all authorities agree that Chinchona is correct, and that consequently Cinhona, Cinchona, and all other forms are wrong." But in botany, as in other matters, custom and conventionality exercise sway; and Mr. Markham holds it necessary to support his main arguments by an appeal to the fitness of things, and by a plea for "justice to the memory of his honoured client. ..... I plead for the correct spelling," he writes, as the concluding sentence of a charming book, "as a tribute of respect to a great family, now passed away; as a right which may justly be claimed by the people of Chinchon; and as the only way by which the memory may be preserved of her who made known to the world the inestimable value of quina bark, who was thus a benefactor to mankind, but whose monument has been destroyed, whose place knows her descendants no more—the illustrious and beautiful lady, Ana de Osorio, 4th Countess of Chinchon."

We entirely sympathise with Mr. Clements Markham's plea (not now uttered for the first time), and it will be a discredit to botanists if it be not generally accepted and

acted upon. No more graceful tribute could be rendered to Mr. Markham for the benefits he has conferred upon vast sections of the human race by the promotion of chinchona cultivation than its ready acceptance. In after-years his name will rank second only to that of the Countess of Chinchon among the individuals to whom the world is most indebted for the knowledge of the invaluable bark. She made the bark first known to Europe; Mr. Clements Markham first promoted the transplantation of the plants from which it is obtained, from their wild haunts on the slopes of the Cordilleras of the Andes to India, and enabled their successful cultivation to be accomplished there. In other words, he made possible the indefinite multiplication of the important plants by systematic cultivation in the Eastern hemisphere, and an immeasurable extension of the benefits of the bark to the native populations of India and the East generally. He has told the story of this great labour and of his coadjutors in the work in his "Travels in Peru and India while superintending the Collection of Chinchona Plants and Seeds in South America and their introduction into India" (1862). The present results of the labour are told in the recently published "Statement exhibiting the Moral and Material Progress and Condition of India during the year 1872-73." From this statement we learn that there are now 2,645,373 plants flourishing in the Government chinchona plantations in the Nilgiri hills alone, while other large plantations in various parts of India and in Ceylon are being most successfully worked. It would appear also that in 1872-73 20,000 lb. of bark, sent from the Nilgiri hills, realised in the London market £4000.

A Manual of the Diseases of the Eye. By C. MACNAMARA. Translated into Bengali by LAL MADHUB MOOKERGEE, House-Surgeon to the Calcutta Ophthalmic Hospital.

WE are unable to offer an opinion as to the merits of this translation, but we can safely say that the work does credit to the Bengalic publisher. It appears that at the present time there are some 1400 students attending the classes of the Calcutta Medical College, and that they are divided into two sections. The first go through a course of five years' study, and are taught the science and practice of their profession in English. The second class, not being versed in that language, are taught in the vernacular dialects of the country, and it is for the benefit of these students that Basho Lal Madhub Mookergee has translated Mr. Macnamara's Manual on Diseases of the Eye into Bengali. We believe that under similar circumstances this work has also been translated into Japanese by Mr. Sloan, and we have no doubt that, on the whole, it is wise to render standard manuals on subjects of this kind into the vernacular languages rather than attempt to compile books for the use of native students. At the same time, we should much like to see an attempt made at independent research on the part of the medical graduates of the Calcutta University. There can be no question as to some of them being men of considerable ability, but, so far as we are aware, not a single one of them has as yet published any original observations bearing on the practice of their profession. We are sorry to notice in the columns devoted to advertisements in the *Indian Medical Gazette and Hindoo Patriot* that licentiates of the Calcutta College have taken of late to advertising "certain" cures for menorrhagia and such like affections. We trust that some healthy influence may be brought to bear upon native practitioners resorting to usages of this kind. The practice is new to India, and should, if possible, be nipped in the bud. Let men who want employment set themselves to honest good work, such as Basho Lal Madhub Mookergee has done, and we can assure them that in the long run they will find it not only pays, but will bring them infinitely greater satisfaction than that of resorting to means such as we have referred to.

We can only hope our author's appeal to the Government of Bengal to endeavour to raise the standard of the vernacular medical education among the natives of India will gain a hearty response, and that his work may meet with the encouragement it deserves.

Lezioni di Medicina Popolare e Prevenzione. Pel Dr. ALESSIO MURINO. (Lectures on Popular and Preventive Medicine.) Roma. 1875.

THIS is a small work consisting of a series of nine popular lectures on some of the commoner diseases, originally published in the columns of a newspaper, the *Osservatore Romano*. The author treats of diseases of the skin and of the blood, ranging under the latter anæmia and chlorosis, rickets, scrofula, and tubercle, and subsequently of malarial fever and of contagious fevers generally. The object of the lectures appears to be the popular exposition of the causes lying at the root of these common complaints, and the way in which they may be prevented. The description of each disease is preceded by a concise but comprehensive account of the anatomical and physiological facts bearing upon it. The style is lively and entertaining, the description of the various diseases exceedingly good, and in many cases graphic, and for the most part the recommendations as to prevention and treatment are marked by great simplicity and sound sense. On one or two points we find ourselves unable to agree with the author—as, for example, when, under the head of prevention of contagion, he recommends ethiops mineral as a certain prophylactic against the whole class of acute specific diseases if taken constantly. He is evidently animated by a strong conviction of its utility, and there is an entire absence of all quackery about the book. But the advice to mothers on the management of their children is excellent, and so also are the rules laid down for the prevention of rickets, &c. The clear and popular style should make the book one widely read and very useful, and we regret that it is not in English instead of Italian.

A Short History of the English People. By J. R. GREEN, M.A. London: Macmillan and Co. 1875.

IT has seldom been our lot to read a volume that has interested us more than this. It is no "drum and trumpet history," or record of wars and rumours of wars, but a history of civilisation, of that progress and development, constitutional, intellectual, and social, of the English people, by which we are what we are. As far as breadth of view, a clear and forcible style, and a good arrangement of intrinsically interesting material are concerned, this volume leaves nothing to be desired. When we recall the ordinary run of books that went by the name of histories for school use, how far and away superior this one appears; and it is besides an eminently wholesome and refreshing book, which a man may take up and read at the end of a day's work with profit as well as pleasure.

Lessons in Elementary Mechanics, introductory to the Study of Physical Science. By PHILIP MAGNUS, B.Sc., B.A. London: Longman, Green, and Co. 1875.—This seems to us a very useful little volume, both as an elementary school text-book and for candidates preparing for matriculation, preliminary, scientific, and other examinations. It is well put together, not too advanced for the end in view, and the lessons and illustrations are of a clear and pertinent character.

MR. ALFRED COOPER has been elected an Honorary Fellow and a Corresponding Member of the Medical Society of St. Petersburg.

THE LANCET.

LONDON: SATURDAY, MAY 22, 1875.

NOTHING could be more opportune than the discussion on Puerperal Fever now proceeding at the Obstetrical Society. It will certainly elicit much information from a great variety of sources. If it fail in settling the fundamental problem as to the existence of a special disease properly described by the term "puerperal fever," it will at any rate help to define the actual limits of our knowledge, and to indicate more clearly the road to its extension.

It is a question which, beyond almost any other in the domain of Medicine, is interesting in its twofold relation to the interest of humanity and to the position of medical practitioners in their daily work. Probably more women die in childbed from the diseases included under this term than from all other causes put together. The popular mind, not quite without justification, is agitated by vague terror lest dire disease, or even death, may be the condition of childbirth; and this terror is pointed by the feeling that the hand which is invoked to give help may carry the seed of destruction. This popular terror finds its reflex in the legal mind, which ever seems to show an instinctive antagonism to science. The position is in many respects identical with that which for ages marked the struggle between science and priestcraft. Law, in its way, is as intolerant of medical science as ever the Holy Inquisition was of astronomy. It has long been felt that where the question of mental capacity is tried in our courts the decision might, as Dr. MAUDSLEY has said, as well be determined by the tossing up of a shilling. And its practice on questions of obstetric science would be ridiculous if it were not revolting. Lawyers evoke theories of Medicine from their own inner consciousness. The testimony of medical experts is too often smothered under legal forms and fictions. The modes of taking what is called skilled evidence offer in practice the most absurd illustrations of "how not to do it." There is no direct honest appeal to science. The courts take just what evidence the ignorance, the interests, the means of the contending parties, or accident may present. They oppose one set of witnesses to another, swear them to tell the whole truth and nothing but the truth; and then exercise the subtlety which long practice has developed in the endeavour to make the witnesses say only that part of the truth which is wanted to fit one side of the case, to suppress what tells against it, and to represent the witness who says more of the truth than suits the purpose, or which goes beyond the intelligence of the legal mind, as ignorant or dishonest. Human ingenuity could hardly devise a machinery better adapted to exclude scientific truth than that by which English law is worked. And a great misfortune is that we ourselves supply the means of keeping this machinery going. A charge of malapraxis is seldom laid but medical men are found ready to give the most unhesitating opinions in support. Indeed, such charges could hardly find their way into court unless they were so supported. The use to which the lawyers too often put the medical witness is to make him turn the spit to the roasting of his brother. We wonder if it ever occurred to the lawyers who make and administer our laws to provide pains and penalties for malapraxis of counsel. Yet no one can doubt that unfortunate men have been blasted in reputation, thrown into prison, even hanged, through the incompetence of their advocates. Whilst dangling the sword of what they call justice over everybody else, and especially threatening the practitioners of medicine, they cover themselves with the odious shield of privilege.

Recent events show that prosecutions for malapraxis are aimed with peculiar vigour against those who practise obstetrics: another example of oppression—of the weakest going to the wall. Obstetric practitioners have no voice in the government of their profession, or in the regulation of medical education. The physicians and surgeons pure exercise supreme authority in these matters; and their supercilious disregard of obstetric science leads to a neglect in the provision for instruction in this department hard to excuse. This neglect exposes those who practise it to constant danger, redounds to the discredit of the profession at large, and is a grievous injury to the public. A physician of high rank, we have heard, has enunciated the opinion that death within a month of childbirth is a violent death, and ought to be the subject of a coroner's inquest. Yet what hospital is there where catastrophes have not occurred for which the physicians or surgeons were every whit as worthy of blame and of prosecution as have been the defendants in some recent trials? Is there not worse than thoughtless folly in the conduct of those amongst us who either join the popular outcry against our humbler brethren, or who at least suffer them to be run down without a breath of protest? And this because lawyers say they are guilty of criminal ignorance! Admit the justice of the condemnation. Who so largely responsible for the prevalence of that ignorance as our hospital physicians and surgeons who control medical education? It is very much their fault if the heavy hand of the law crushes the weak and lets the strong escape.

Entertaining deep convictions as to the injustice of the conditions under which obstetric practitioners pursue their trying duties, we are not prepared to contend for absolute immunity from legal responsibility. But we protest against the almost exclusive incidence of penalties upon them, and against the utterly unsatisfactory manner in which the law deals with scientific evidence in deciding upon questions of malapraxis. Instead of the stupidly clumsy mode of examining *viva voce* medical witnesses taken more or less at haphazard, subjecting them to the bullying of counsel who are struggling to keep back what does not suit their "case," questions of malapraxis should be referred to the investigation of those who are skilled in the matter for deliberate report. Reports so prepared, open to the criticism of the profession, would command respect and promote the ends of justice.

To recall attention to our immediate theme—the practical relation of puerperal fever to the conduct and responsibility of medical practitioners. What should be their conduct?

What ought to be their responsibility? How shall they escape the perils under which they practise?

Already the conflict of opinions elicited from men entitled to speak with authority is so great that the popular and legal dogma which assumes that fever in childbed is always communicated from without must be abandoned. In many cases, at any rate, it is certain that fatal fever may be kindled in the patient's own system, no spark being applied from any extraneous source. Here, then, in any given case of alleged empoisonment, the first difficulty to be encountered is to prove that the disease might not have arisen under purely subjective conditions. The next difficulty will be to prove that the disease was a recognised zymotic or other communicable disease. The third will be to prove that it was communicated by the particular person charged. When we consider the evidence adduced in this discussion, showing that in the experience of busy men actively engaged in every kind of practice the occurrence of fever in their obstetric patients is extremely exceptional, and when we reflect upon the multifarious sources whence infection may enter the lying-in woman, it can only be by the most arbitrary process of reasoning that *one isolated case* of so-called puerperal fever can be brought home to the medical attendant. We have ourselves known one instance in which legal proceedings were commenced against a medical man for having communicated scarlatina to a lying-in woman. The case was abandoned because it subsequently transpired that friends of the patient visiting her were the more probable carriers of the poison. Unless the medical attendant is invested with absolute control over the house and household, unless he choose the nurse, unless he is permitted to shut off his patient from all external relations, it is simply monstrous to make him responsible for her freedom from infection. But the case alters when a second or a third case, or, *a fortiori*, a longer series of bad cases, occur in the practice of the same man. We then get cumulative evidence—still circumstantial, it is true, for proof of direct infection can hardly be obtained—which it must be very difficult to resist. It is now unhappily an experience that has been too often repeated in all parts of the world that series of fatal cases have occurred in the practice of one individual alone, the women attended by his neighbours remaining unscathed. Such facts it is folly to dispute. But such a calamity may almost always be averted. He who has had one bad case may *generally* avoid having a second by the simple expedient of suspending practice. But it must not be forgotten that two or three cases may follow quickly or occur spontaneously, so that it may be out of his power to stop at one case. This rule of temporary abstention from obstetric practice is very generally most conscientiously observed. Approving this custom, insisting upon its efficacy in limiting puerperal mortality, and in shielding obstetric practitioners from unjust prosecutions, we take leave for the present of the main question discussed in this article. We reserve for future opportunities the examination of the more purely scientific aspects of the subject.

MR. STANSFELD is making for himself a certain reputation just now, though it is not one which will ultimately conduce to his influence as a statesman. He has succeeded, by the hysterical violence of his speeches on the Contagious Diseases Acts, in almost converting some opponents into supporters of these measures. Practical men who wish to make the best of this wicked world begin to think that there cannot be much strength in a cause which provokes from an ex-minister who was a party to this kind of legislation such a tirade of monotonous and questionable abuse as he now indulges in against it. Equally dubious—for the purposes, we mean, of his ultimate reputation as a statesman,—and equally womanish, is the kind of way in which he is trying to procure what he considers a recognition of the rights of women in Parliament. He has given notice of a motion of opposition to the enabling Bill of the Royal College of Surgeons, not on the ground that he thinks it right to keep the College of Surgeons disabled from joining in a Conjoint Scheme, but that he thinks it fair game to take advantage of the forms of the House to baulk a Bill, which he and everybody else must approve, simply because it does not do something to secure another object perfectly irrelevant to the one in hand. This is not very high-minded behaviour; and we need not do worse than wish Mr. STANSFELD his reward. Mr. STANSFELD and every other member of the House of Commons is sent to it, first, to do what is clearly right and for the public good; secondly, to try to persuade others of the rightness of his more doubtful views, and to join him in embodying them in legislation. But he is not at liberty to prevent one admittedly good object being accomplished because he cannot secure what he thinks would be a second. Even Liberals will be glad to see a member of the late Cabinet defeated in such attempts.

Apropos of this question of Conjoint Schemes is the question of the approaching meeting of the General Medical Council. It will be an awkward situation for the new President, Dr. ACLAND, if he is unable to report something more creditable and encouraging than anything which has reached our ears as to the progress of Conjoint Schemes. It can hardly be doubted that Lord SANDON would, in deference to Mr. WADDY'S forcible question, put himself in communication with the President of the Medical Council on the subject. It is equally indubitable that Dr. ACLAND would have nothing very reassuring to give Lord SANDON in the way of information. To say that an enabling Bill last year for the Apothecaries' Society and another this year for the College of Surgeons showed that the matter was not being left alone by the bodies might do for a reply to a formal question, but it would not satisfy any earnest and well-directed inquiry on the subject; for it is known that, if the enabling Bill were already an enabling Act the rival and jealous colleges would probably not be able to settle their differences as to the terms of conjunction. It is equally well known that in Scotland and Ireland the question of conjunction has been almost abandoned as impracticable. In plain terms, if the system of half-qualifications is to be terminated, it seems clear that it will not be ended any time on this side of the millennium by the spontaneous action of the examining bodies. Surely the time has come for the Medical Council candidly and explicitly to state this to the Government. We do not say that Dr. ACLAND is responsible for the deadlock of this question. But he will be deeply responsible if he does not

at the approaching meeting see that it is raised, and that its real position is ascertained. He is closely connected with one of those bodies which can afford to look at this question from a national and educational point of view, not from the narrow point of view of a corporation with vested rights, which "must live." There is a party in the Council which views this question from the higher stand-point. We do not say it is in a majority. We rather fear it is not. But it is strong enough to make a great impression on any Government, if it likes boldly to represent the present state of this question. And the time has fully come for such a representation. For years this matter has been a standing subject of debate in the Council, and of mutual recrimination between the members representing the different divisions of the kingdom. This year it is possible that its discussion would provoke the display of some difference between the members representing the English bodies, who have hitherto been held up as models of unity and self-sacrifice to self-willed Scotch and Irish members. We are well aware of the responsibility we incur in suggesting the discussion of a question which never comes nearer settlement; but it is because we believe that any discussion of it now must end in a vote declaring the spontaneous combination of bodies impracticable, or in the expression of this opinion by the independent section of the Council, that we should be reconciled to once again going over the dreary ground of reports of the state of the Conjoint Schemes in England, Scotland, and Ireland.

THE Scientific Report just issued by the Medical Officer of the Privy Council and Local Government Board contains much important and interesting matter, which is of especial value at the present time, when so much attention is being directed to the nature and properties of contagia. The volume (which can be obtained for *sixteenpence!*) contains the following articles: A Report on Recent Researches on the Pathology of the Infective Processes, by Dr. SANDERSON; on the Contagium of Variola Ovina, and on the Lymphatic System and its Relation to Tubercle, by Dr. KLEIN; on the Etiology of Cancer, by Dr. CREIGHTON; and a lengthy and laborious research into the Chemical Constitution of the Brain, by Dr. THUDICHUM. A *résumé* of the last-named contribution has already appeared in our columns (March 6th and 13th); and we propose to present our readers, in this and future articles, with some of the valuable facts adduced in the remainder of this Report.

Dr. SANDERSON, having shown by his previous researches that all contagia are probably particulate and living, points out that there are two relations in which the life of the lowest plants stands to the various processes of disease. In the one case, specific forms of vegetable life are found associated with specific diseases; in the other, the common processes of disease are associated with septic microphytes, known under the various names of microzymes, micrococci, microsporon septicum, coccobacteria septica, &c. Of these terms, Dr. SANDERSON prefers to use micrococci, or simply spheroids, retaining the words "dumb-bell," "chain," and "colony," or "zoogloea," for the different forms and groupings of the organisms. The word "mycosis" is used to denote an infiltration of a living tissue with micrococci. The two diseases which modern research has shown to depend on a mycosis are diphtheria and erysipelas; and the recent gains to our knowledge in this direction are here fully and lucidly expounded by Dr. SANDERSON. He points out that the term diphtheria is used in two senses: the one denoting the pathological process met with in so-called traumatic diphtheritis; the other and original term being the name of a specific contagious sore-throat, tending to laryngeal croup. Among recent writers, HUETER would restrict "traumatic diphtheritis" to such inflammations which end in ulceration or destruction of tissue; while BILLROTH uses the term in a wider sense so as to include all acute fibrinous infiltrations, whether ending in ulceration or not. These two authorities differ in their interpretation of the nature of the infiltration, HUETER describing invasion of the spreading margin with micrococci, which BILLROTH describes as merely granular fibrine. Dr. SANDERSON then gives a sketch of the process of diphtheria proper, with an outline of the normal structure of the mucous membrane of the pharynx; and points out that it is upon the nature of the granular infiltration of the mucosa and subjacent tissues that information was required. This has been duly supplied by NASSILOFF, who has shown it to consist in the filling of the interfascicular channels and lymphatics with masses of micrococci, both in pharyngeal and laryngeal diphtheria. The process is then a mycosis, but not to be regarded as specific, since it occurs similarly in connexion with other morbid processes. But the organisms may be the exciting causes of the affection, and it was to demonstrate this part of the subject that experiments were performed by NASSILOFF, EBERTH, and DOLSCHENKOW. Similar experiments were made by LETZERICH and OERTEL, who arrived at the conclusion that the diphtherial mycosis is specific, upon grounds which Dr. SANDERSON deems insufficient. NASSILOFF produced an artificial mycosis of the cornea by puncturing that structure with a needle charged with diphtheritic material; and a similar method was pursued by EBERTH, with like result—viz., filling of the lymphatic canaliculi with micrococci. That it is not, however, necessary to use any specific virus to produce this corneal mycosis was proved both by EBERTH and DOLSCHENKOW—the latter in a large number of experiments in which products of putrescent muscle were used for inoculation. As many as 46 per cent. of the experiments failed—a result attributed by DOLSCHENKOW partly to defective manipulation, but also to the fact that a successful inoculation required the introduction of micrococci in mass and at an early stage of their development. Dr. SANDERSON, while acknowledging that the question is still obscure, points out that we have learnt that forms of micrococci exist which are capable of colonising in the living tissues and of giving rise to a disintegrative inflammation, without the necessary antecedence of any morbid process.

The discovery of a mycosis in erysipelas is of more recent date than that of diphtheria, and it forms an interesting chapter in the history of infective processes. Dr. SANDERSON, after briefly describing the erysipelatous process, and quoting the researches of VOLKMANN and STEUDENER upon the histology of the disease, remarks that evidently there must

be some change antecedent to the characteristic effusion and corpuscular infiltration. The nature of this change has been the subject of careful inquiry by ORTH, of Berlin, and LUKOMSKY, of Strasburg; the former observer obtaining, as the result of experimental inoculation in rabbits of the products of erysipelatous inflammation, all the previously known anatomical changes of erysipelas, together with large numbers of bacteria in the fluid of the swollen parts. LUKOMSKY'S research was both pathological and experimental, and is given in full detail by Dr. SANDERSON. In five cases of erysipelas—one idiopathic, the remainder following surgical operations,—which were anatomically investigated, some early in the disease, others late, the following striking peculiarity occurred—viz., infiltration of the lymphatic spaces and vessels with micrococci in the zone of invasion, and not elsewhere. Thus these organisms were invariably found in most abundance beneath the apparently healthy skin which surrounded the margin of the erysipelatous patch; in the parts where the inflammation was most marked there were granular masses, but no micrococci, nor were they to be found in places from which the erysipelas was receding. In the last-named cases, although the tissues were still the seat of much cellular infiltration, the cells were mostly in a state of fatty degeneration. The experimental researches were undertaken with a view to test the identity of induced erysipelas with the natural disease. They consisted in the subcutaneous injection of liquid containing micrococci; the result being intense spreading inflammation of the tissues, with multiplication of the organisms, which filled the lymphatic channels; whilst fluid free from micrococci yielded no result. Similar results followed from the application of material containing micrococci to raw surfaces, the organisms being always most numerous at the periphery of the inflamed patch. Some of the experiments are given in full detail by Dr. SANDERSON. It is right to add that these researches of LUKOMSKY have been recently called in question by Dr. ARNOLD HILLER, of Berlin, who throws a doubt upon the granular bodies being micrococci at all, and thinks their absence from the central parts of the patch to be contrary to the known processes of vegetable life; that they could not be absorbed because they completely plug the lymphatic vessels, nor could they migrate because no movements were observed in them; and that they could not be the exciting cause of the inflammation because of their absence from the tissues that are most inflamed. HILLER, however, holds that the poison of erysipelas is a chemical one, resulting from decomposition of albuminous matter; and although he describes changes in the local inflammatory products leading to the formation of masses of highly refractive fatty molecules, he does not explain the early appearance of similar granules which he says have been miscalled micrococci by LUKOMSKY. Dr. SANDERSON'S report was probably completed before HILLER'S objections were published—at any rate they are not here referred to, the subject of local infective processes characterised by the presence of septic microphytes terminating with the account of LUKOMSKY'S researches. The second part of Dr. SANDERSON'S report, together with Dr. KLEIN'S research on sheep-pox, we shall leave for another article.

Annotations.

"Ne quid nimis."

THE VIVISECTION BILLS.

A PERUSAL of the two Bills that have been laid before Parliament—one in the House of Lords by Lord Hartismere, the other in the Commons by Dr. Lyon Playfair and other members—will inevitably show one thing—viz., the extreme difficulty of legislating at all on such a subject; a difficulty which we declared from the first would have to be encountered. This is, of course, entirely apart from the question as to whether any legislation was required or should have been attempted. Lord Hartismere's Bill altogether prohibits vivisection except in a registered place, which is to be open at any time to the visits of an inspector of anatomy. Vivisections are only to be performed on animals completely under the influence of anæsthetics, and curare is expressly excluded from being deemed an anæsthetic. The performance of a vivisection without anæsthetics requires that a special licence be procured at a cost of £10, such licence being terminable at the end of six months. Power is given to a justice of the peace to issue a search warrant on information being laid before him that there is reasonable ground for belief that vivisections are performed. Then follow the penalties, method of procedure to recover the same, and a definition of the term "vivisection." No one can have any difficulty or hesitation in seeing that this is a very illogical and objectionable measure: illogical from whichever end it is regarded, and objectionable every way.

The Bill in the Commons is entitled "A Bill to Prevent Abuse and Cruelty in Experiments on Animals made for the purpose of Scientific Discovery." By it any person—but only for the purpose of new scientific discovery—is permitted to make an experiment on a live animal, provided that animal be rendered insensible, and killed on the termination of the experiment, if it has been so injured as likely to cause it after-suffering. Licensed persons may subject an animal to an experiment without the use of anæsthetics, provided certain conditions are complied with—viz., that the experiment is solely for the purpose of new scientific discovery, and that insensibility would frustrate the object of the experiment, which is to be terminated as quickly as practicable, and the animal is to be killed under the circumstances previously mentioned. A register of all such experiments is to be kept. A licence may be obtained on application by any person, if accompanied by a certain certificate intended to guard against abuse; but in the case of professors of physiology, medicine, anatomy, or surgery, the certificate is dispensed with. Such licence is to extend to any person assisting the holder of the licence. The penalties and method of procedure for their recovery, &c., under the Summary Jurisdiction Acts, are set forth, and an appeal to Quarter Sessions is permitted.

It will be seen that this is a much more carefully prepared Bill than the other. Notwithstanding that it is believed to have received the sanction of some distinguished physiologists and men of science, we venture to doubt whether it will pass. Who is to be the judge of what is a reasonable object of new scientific inquiry? The magistrate or magistrates and the Court of Appeal are equally ignorant in this matter. And the same objection may be raised to other and similar questions. Then, again, no attempt is made to distinguish between experiments on animals whose organisation would indicate a far relatively higher sensibility than other animals lower in the scale of sensibility; and constant mistakes would arise from ap-

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parent acts of consciousness in cases where no real consciousness of pain was present. There are several other points; but let it suffice that the more this subject is dispassionately examined the greater appear to us the difficulties of legislating upon it. We are not now, and have never been averse, to an attempt being made; but we feel convinced that it is only part, and a small part, of a large subject, and that we were correct in advising that some preliminary investigation by a properly constituted Commission was absolutely required. That much ignorance exists in the public mind on this subject, that the number and amount of experiments on animals in this country have been greatly exaggerated, that the difficulty of drawing the line between justifiable and unjustifiable experiments is extreme, and that a good deal of indignation has been expressed by people in utter forgetfulness of the enormous amount of pain and suffering to which the lower animals are otherwise subjected, cannot be doubted. It was all the more important, under such circumstances, that nothing should be done without previous deliberate inquiry.

THE POLLUTION OF RIVERS BILL.

THE debate that took place in the House of Lords last Friday night on the second reading of the Rivers Pollution Bill must not pass without comment on our part. The question is of such importance, and the interests involved so great, that each particular of the Bill ought to be subjected to minute and impartial criticism. We were never sanguine enough to imagine that the present Bill would be a complete and final measure; we hoped, however, that whilst it would be sufficiently stringent to prevent any further pollution taking place, it would have compelled sanitary authorities and manufacturers to do something toward diminishing the present evils, and have fixed a definite time when such persons should altogether cease to pour their refuse into our rivers. The problem as to the best mode of disposing of the sewage of our great towns has not yet been satisfactorily solved, so that we should have been content to have allowed the time fixed the widest limits, on receiving a definite assurance that the absolute purity of our streams would be eventually secured to us. The present Bill is sadly disappointing in this respect; as far as we can see, towns that now pour their sewage into the rivers, or, rather, towns that were doing so on the 1st of January of this year, may continue to do so without let or hindrance. Indeed, if the Bill passes in its present form, they have acquired a legal instead of a permissive right. Nor will the sanitary authorities be compelled to seek for other modes of disposing of the sewage unless Parliament again takes up the subject, and by means of future legislation takes steps to supply the deficiencies of the present Bill. That the subject will again be dealt with we have not the slightest doubt, but meanwhile much valuable time will have elapsed, and the Government will have lost the opportunity of rendering the country splendid service.

With regard to the disposal of the refuse from manufactories, the Bill is unjust as well as unsatisfactory. It gives permission to all factories that have been established for twelve years to continue to pour their refuse into a stream, on condition that they have endeavoured, to the best of their ability, to restrain the polluting liquid. This being the case, if it is impossible to deal otherwise with the refuse matter, it is manifestly unfair to their later established rivals that they should acquire a vested interest in river pollution by which alone the trade can be carried on. The Bill, indeed, provides that in future no fresh pollution is to be allowed. No solid matter are to be permitted to be put into streams in such quantities as will interfere with their flow or pollute their waters; nor is any sewage matter, liquid or solid, or noxious liquid from any manufactory or mine, again to be allowed to pass into any stream. Any infringement of this law will be dealt with by the county courts, violation of the Act being visited by a penalty of £50 a day. We are content to leave the carrying out of this Act to the county-court judges, though we should prefer to have seen the proceedings originate at once with the Local Government Board instead of being left, in the first instance, to the action of the local sanitary authority.

Lord Selborne, in the debate in the House of Lords, said that "there seemed to be undue latitude in the definition of 'streams,' for if any watercourse was to be deemed a stream within the meaning of the Bill, it would go very much further than could be intended, and in particular, it would interfere with mining operations, which could not be carried on without using watercourses." We think that all watercourses ought to be deemed streams; there is a growing tendency to use these for the purposes of sewage removal in our villages and suburbs. Many watercourses that we remember years ago as pure and limpid streams are now little better than open sewers. At the same time, we think certain exceptions might be made in the case of mines, and a clause ought to be inserted in the Bill to that effect. A correspondent in *The Times* of Tuesday points out certain defects in the wording of the Bill which are most important. He shows that where fifty manufacturers are situate on the same stream, and the due flow of the stream is interfered with below the fiftieth manufacturer, it would be extremely difficult in the present wording of the Act to prove that such interference arose by putting in of mill refuse from any one individual mill. Again, with respect to the sixth section of the Bill, which authorises local authorities having sewers to give facilities to manufacturers to pour their refuse waters into these sewers, he says the fact has been overlooked "that by doing so the first taker of the water will deprive the millowners lower down the stream of the water they are entitled to use. It is difficult to see how this section can be made to work, as even if only the first mill on an ordinary Lancashire stream, instead of passing its water down for the use of the other mills, passed it into the sewers, the other mills would be stopped for want of water." We quite agree with Lord Selborne, that time should be allowed for the consideration and discussion of all these details throughout the country before the Bill becomes law.

In conclusion, we must characterise the Bill as unsatisfactory, unjust, and mischievous—unsatisfactory because we had hoped to have seen a larger and more comprehensive measure, unjust because it deals unequally with individual interests, and mischievous because it discourages sanitary authorities from attempting to solve for themselves the problem of sewage disposal. Our rivers are left nearly *in statu quo*, and, though we still wait expectantly on the banks, many years will elapse before they run past us bright and pure.

THE OUTBREAK OF ENTERIC FEVER AT CROSSHILLS.

A SERIOUS outbreak of enteric fever occurred at Crosshills about the middle of January of the present year, and did not terminate till the latter end of March. The extent and origin of the disease have been made the subject of an able report by Dr. Eben. Duncan and Dr. Littlejohn, and they have conclusively shown that the outbreak was caused by milk infected with enteric fever material, brought to Crosshills from the neighbouring village of Eaglesham. Dr. Duncan, finding that of the first eleven cases he was called on to attend, ten got their milk from a dairy which he designates A, the other from a dairy which he calls B, de-

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termined to examine more particularly into the sources and condition of the milk-supply. He found that four dairies, A, B, C, D, took their supply from the same agent, who collected it from several farms in the neighbourhood of Eaglesham, but from two in particular—viz., X and Z. It was also ascertained that typhoid fever had been epidemic at Eaglesham for some months, and that two children were ill of the fever in the house of the farmer at X farm, whose milk was sent regularly to the four dairies A, B, C, D; that the water-supply of this farm was derived partly from a well situated close to the midden into which the specifically infected excreta of the patients in the farmhouse were thrown, and partly from a brook which passed through the village, in close proximity to the middens of houses in which cases of enteric fever had occurred. In consequence of this evidence, the four dairies were interdicted from selling Eaglesham milk in Crosshills. The effect of this procedure on the progress of the epidemic was soon noticeable. In Dr. Duncan's practice sixteen cases occurred in the week ending Feb. 28th, eighteen cases in the week ending March 7th, and only two cases in the week ending March 14th. Dr. Littlejohn's report shows that the four dairies A, B, C, D, supplied 262 families, and that these families had ninety-four cases; the thirteen other dairies scattered over the district outside Crosshills supplied 242 families, and amongst these only eighteen cases occurred, and it was further shown that ten of these had occasional access to the Eaglesham milk. Forty families, who used condensed milk or had no milk-supply, escaped without a single case of fever.

Last week we noticed at length the report of Mr. J. Netten Radcliffe and Mr. W. H. Power on the Marylebone epidemic of 1873, which originated from the same cause—viz., the employment of water for dairy purposes on the farm, containing specifically infected excremental matters. A consideration of these two reports leads us to reflect how much we are indebted to sanitary science for the knowledge we now possess as to the mode in which this disease may spread and be communicated. There is little doubt if sanitary legislation were as far advanced as is sanitary science, the recurrence of these outbreaks would be rendered impossible, and enteric fever, certainly in an epidemic form, would become almost unknown. Government ought at once to take the matter of the dairies and dairy farms in hand. No person should be allowed to sell milk, wholesale or retail, without a certificate from a Government inspector, stating that the water supplied to the premises was free from, and secured against, all possible sources of contamination.

REPORT OF THE MEDICAL OFFICER OF HEALTH FOR NEWCASTLE-ON-TYNE.

SINCE the visit of our Sanitary Commission to Newcastle we have always perused the annual reports of Dr. Armstrong, the medical officer of health for that town, with considerable interest. We find, from the present report, that during the past year the birth-rate has decreased 1·9, and the death-rate 0·9, per 1000 on the rates of 1873. The rate of deaths from zymotic diseases shows an improvement of 2·1 per 1000 on that of the previous year. The death-rate of children under one year of age is 8·0 per 1000 population at all ages, against a rate of 7·8 during 1873. Dr. Armstrong deals fully with the causes at work in producing this excessive infant mortality. Of the children dying in Newcastle-on-Tyne before completing the first year of life, the deaths of 12 per cent. are registered without a certificate either from a medical practitioner or from the coroner, but only upon a statement made by the persons who report the deaths. This practice Dr. Armstrong considers leads "indifferent parents to the conclusion that infant deaths are of slight consequence, and that, therefore, neglect or carelessness, if nothing worse, on their part, as it can be easily concealed, is immaterial." Altogether during the year there were 122 infant deaths registered without a medical or coroner's certificate. Attached to the report is a fortnightly diagram of the deaths from all causes at seven different periods of life, with temperatures. It is instructive to compare the increased rise in the death-rate of children under one year of age with the increased rise of the mean temperature during the summer months. Towards the end of the year typhus made its appearance in the town; the cases as they occurred were removed to the Fever Hospital. This isolation, together with the means of purification carried out by the nuisance and lodging-house inspectors, prevented the disease from becoming epidemic. Dr. Armstrong animadverts strongly on the deficiency and character of the water-supply. This is a point on which our Commissioners were expressly emphatic, and we regret to find that little has been done to remedy the evil. On the whole, however, the sanitary authorities of Newcastle-on-Tyne are to be congratulated on the work done during the past year, and their medical officer on the clear and comprehensive nature of his report. He has ably demonstrated the various causes at work in producing the excessive mortality of the borough, and if he is properly supported by the sanitary authorities he will be able in a few years to record a progressive diminution of the death-rate.

ELECTIONS AT THE ROYAL COLLEGE OF SURGEONS.

THE election of members of the Council of the Royal College of Surgeons will take place early in July next. The retiring members are Mr. Prescott Hewett (who is one of the Vice-Presidents of the College), Mr. Spence Smith, and Mr. John Birkett. The two latter gentlemen will, we believe, offer themselves for re-election; but Mr. Prescott Hewett has determined to retire altogether. Who are likely to be the fresh members is, of course, difficult to foretell. There are many excellent Fellows eligible for this election. The following is the order of seniority of the metropolitan Fellows:—Mr. John Cooper Forster, surgeon to Guy's Hospital, and Mr. Henry Smith, surgeon to King's College Hospital (1849); Mr. William Adams, surgeon to the Great Northern Hospital (1851); Mr. Savory, of St. Bartholomew's Hospital (1852); Mr. Barwell, of Charing-cross Hospital, Mr. Bryant, of Guy's Hospital, Mr. Timothy Holmes, of St. George's Hospital, and Sir Henry Thompson, of University College (1853). If a provincial candidate should come forward, none is more competent than Mr. William Cadge, of Norwich, Fellow by examination (1848), and by general repute among the best of provincial surgeons. Mr. Hussey, of Oxford, is a Fellow of 1849, and as many claims. Mr. Lister, of Edinburgh, is a Fellow of 1852, but his distance from town will, we judge, preclude the possibility of his candidature. It is rumoured that Mr. Wheelhouse, of Leeds, will probably come forward; but this must be a misapprehension, as this gentleman is only a Fellow of 1864.

THE LAW RELATING TO INFANTICIDE.

BLINK the fact as we may, we must admit that we still have, in common with more enlightened nations, a notion that there is a difference between the value of the life of a child and that of a grown person, and, consequently, a lesser criminality in taking away the one life than in taking away the other. The forms of infanticide vary. Some are positive and coarse; some are negative and very much concealed. But in one way or another there is a good deal of practical infanticide even in this Christian country. A child may either be killed or allowed to die. The life of

BEST COPY AVAILABLE

an infant depends on its receiving a certain amount of maternal attention and of food. The withholding of these will kill a large proportion of infants as effectually, if not quite so painlessly, as a dose of laudanum. It is certain that a large proportion of children come by their deaths, with more or less criminality on the part of parents, in this way, of which the law takes no cognisance. One of the "Peculiar People's" children may have an inflammation or other complaint, only requiring medical treatment to avert death, but the "Peculiar People" may withhold the medical treatment apparently with legal impunity.

There is a Bill now before Parliament to amend the law relating to infanticide of a coarser kind—viz., that form of it practised by the mother of a child newly born or even partly born. Hitherto such a crime has not been doctrinally distinguished from other forms of murder. But the British juryman has made a practical distinction by almost invariably bringing in a verdict of "Not guilty" in such cases, so as to avoid the capital punishment of the mother. Mr. Charley's Bill proposes to call the crime felony, and not murder, and to punish it with penal servitude or imprisonment. We approve of the Bill so far as it alters the punishment for this form of infanticide, and hope it will become law. We do this, not because we think lightly of the sin of child-murder, but just for the contrary reason. And we wish to see it punished. The law must hold high the sanctity of infant life. And we think Mr. Charley's Bill does this.

HEALTH OF TOWNS AND WATER-SUPPLY.

WE have received an early copy of the evidence given by Dr. William T. Gairdner, of Glasgow, before the House of Commons Committee on the Birmingham (Corporation) Water Bill, and some of the particulars elicited are so important that we are glad to direct prominent attention to them. Dr. Gairdner, who, as all our readers know, was for some years medical officer of health for the city of Glasgow, was called upon by the Privy Council in 1865 (when cholera threatened this country) to look to all the sources of water-supply. He found that a great proportion of the injurious sources of water in Glasgow had been shut up since the bringing in of the Loch Katrine water, and that only about twenty-four wells existed. The water of these was analysed, and found to be bad or doubtful in quality, and so the Corporation closed them, and supplied in lieu thereof water from the Loch Katrine mains, so that (the witness observed) "the whole of Glasgow now within the municipal boundary drinks absolutely pure water. There are street taps everywhere, especially in the neighbourhood of the poorest houses. There are fountains for horses to drink everywhere, and these are perfectly free to the population." After bearing testimony to the fact that in the cholera epidemic of 1866 Glasgow was remarkably free from the disease, Dr. Gairdner was examined as to the actual and comparative mortality from diarrhœa, dysentery, and cholera. His evidence shows that the diarrhœal death-rate in Glasgow over the ten years 1861 to 1870 was 590 per million, whereas that of Lanarkshire was 766 per million. In consequence of this remarkable comparative result, Dr. Gairdner inquired into the state of Glasgow before the introduction of the Loch Katrine water. The result of this inquiry proved that in 1855 the death-rate was 143 in 100,000 living; in 1856, 126; in 1857, 226; in 1858, 155; and in 1859, 94. So that the mean of those five years before the introduction of the Loch Katrine water was 149 in 100,000 living, whereas since the introduction of the lake water it has averaged 59. We commend this result to the attention of those who desire to buy up the vested interests of the London water companies, and place the conduct of the supply in the hands of a single authority.

MICROSCOPICAL EXAMINATION OF THE PROCESS OF HEALING ULCERS BY TRANSPLANTATION OF SKIN.

M. THIERSCH, having a patient whose leg had to be amputated in consequence of a large and incurable ulcer, thought it a good opportunity to examine the changes that take place when portions of skin are implanted on granulating surfaces. For three weeks previously he accordingly transplanted portions of skin day by day, the last pieces being applied eighteen hours before the amputation. The chief results arrived at were:—1. That adhesion occurs without the intervention of any intermediate cementing substance. The adherent parts are in immediate application, or at most are only separated by a couple of blood-corpuscles. 2. The adhesion, when complete, takes place by means of the inosculation of vessels, which may be observed even eighteen hours after the act of transplantation of the new skin. A connexion is at this period seen to occur by intercellular passages extending between the sharply contoured vessels of the skin on the one hand, and those of the granulations on the other, and these intercellular passages become proper vessels in the course of a few days. 3. At the same time the vessels of the skin beneath the transplanted portion undergo secondary changes; they become wide, irregularly dilated, with prominences on their walls, and in fact assume the characters of embryonal bloodvessels. 4. True new formation of vessels may perhaps take place when the primary inosculation fails. In such cases the epidermis and the papillary bodies fall off after a little while, and the transplantation is believed to have failed; but this is not so, since the subcutaneous connective tissue with the remains of the sweat-glands remain adherent. After the lapse of some time new-formed epidermis appears where the transplantation was made, which may perhaps be due to the germination of the remains of the sweat-glands. Thiersch finally recommends a modification of Reverdin's plan—namely, that the surface of the wound to which the skin is about to be transplanted should have any granulations that may be found upon it shaved off, and the new skin applied in the course of a few hours.

MEDICAL ADVERTISING IN THE PROVINCES.

SOME of our provincial brethren are happier in the matter of being advertised than we are. Somebody else does it for them, and they blush to find themselves famous. Two specimens are before us. One in the shape of an article in a remarkable paper called the *Newcastle Critic*, headed "Our Portrait Gallery: Anthony Bell, L.R.C.P. Ed.," in which every wonderful incident in the life of Mr. Bell—who is presumably about thirty years of age,—from his going to Dr. Bruce's school to his taking the licence of the Royal College of Physicians in Edinburgh in 1867, is duly recorded. It is not every man who gets two columns of laudatory biography before he has been ten years in possession of an ordinary diploma like the licence of the Edinburgh College. The only drawback in this description is a peculiarity of spelling (e.g., uteris for uterus) and a confusion in the use of language on the part of the critic, which suggests considerable unacquaintance with the subject. We should advise him, on giving the next portrait, to have a dictionary at hand for hard words. The only advantage of such bad spelling and crude descriptions of operative procedures is to exonerate the subject of the memoir from any conceivable co-operation with the critic. In the other case before us the details are a little too minute and technical to admit easily of this supposition. A wonderful account is given in the *Marlborough Times* of the skill displayed in the Savernake Cottage Hospital by Dr. J. B. Maurice. Two stone opera-

tions are minutely detailed, the account ending with this effective advertisement of the hospital, not to say of the operator:—"These are only two of many instances of successful operations for this painful and most fatal disease—the cause of the death of the late Emperor of the French—which have been successfully performed at this small but interesting and useful institution, which daily proves itself more and more worthy of all, and more patronage than is already bestowed upon it." If cottage hospitals are to encourage this sort of thing they will have to be discouraged by the profession.

MEDICAL OFFICER OF HEALTH AT CAMBRIDGE.

WE congratulate the sanitary authority of Cambridge on securing the services of Mr. Bushell Anningson. That gentleman, as we have previously pointed out, has considerable qualifications for the office, and as he has promised to devote his whole time to its duties, we expect ere long to notice a marked improvement in the general sanitary condition of the town. We fear, however, it will be some time before Mr. Anningson will be able to reconcile the differences that exist between the university and town members of the board, which differences prevent the board obtaining an extension of the Improvement Act under which they are at present compelled to work, and which is utterly inadequate to provide for the sanitary requirements of the town. We hope, however, that Mr. Anningson will keep prominently before the board the necessity of adopting a complete and efficient system of drainage, and of diverting the sewage from the Cam. With respect to the latter, we think some of the riverside colleges might set the example, and, like Trinity College, adopt the system of earthclosets. The arrangement of the privies at St. John's College is utterly abominable. From the bridge which connects the old and new buildings of this college it is possible to see masses of broken excrement floating on the surface of the stagnant Cam. Such a sight is disgusting and indecent and in hot weather the smell is most offensive. We were glad to find, during a recent visit to Cambridge, that the general feeling of the townspeople is now decidedly in favour of sanitary reform, and we hope the more intelligent members of the Sanitary Board will soon receive an accession of strength, and from a small and powerless minority be converted into an effective majority.

STATE MEDICINE.

SURGEON-MAJOR F. DE CHAUMONT, M.D., of the Netley Hospital School, delivered, on Saturday afternoon, before the Society of Apothecaries, the first of a series of six lectures upon this important subject. After some general remarks on the precise definition of State medicine and the uncertainty that still prevailed as to the exact meaning of the term, the speaker premised that the chief enemies of sanitation were ignorance and self-interest. He then described at length the history of sanitation, particularly in this country, during the last thirty years, since the publication of the Report of the Health of Towns Commission. Graphic examples were given of the excessively insanitary condition of the principal towns in the kingdom, and, in the case of Preston, several diagrams, compiled by the Rev. W. Clay, were referred to, to show the actual and comparative mortality in that town among the upper, middle, and lower classes of the population. Dr. De Chaumont spoke very warmly of the skilled and continuous exertions of Mr. Simon and his staff, and the industry of the Registrar-General's Office and Dr. Farr. If any were present who compose what the speaker called "the average mind of a corporation or vestry," they would or should have been convinced that the history of the past showed ample reasons for the necessity of energy and active work in the future. These lectures will be continued for five successive Saturdays, are open to all medical practitioners, and are specially useful to medical officers of health.

PASTEUR.

THIS distinguished philosopher has just received, at the hands of the Academy of Medicine of Paris, a compliment of the most flattering kind. That learned body, on the occasion of the distribution of prizes and rewards for the year 1874, instructed M. Henry Roger, the reporter, to describe the great services rendered to humanity by M. Pasteur's researches, and to state that the Academy considered him as the national laureate. The reporter cited the decision of the "Académie Française" (the highest literary body of France), which, having to bestow a decennial prize, and not finding a deserving candidate, gave the prize to MM. Thiers and Guizot, the two great historians. Thus the Academy of Medicine desires to record, in the absence of any special reward, its admiration of the patient and persevering investigations of M. Pasteur, which have been followed by the most signal benefits to public health and several branches of industry. The Academy wished, by this means, to associate itself with the National Assembly, which had voted a pension of £480 to M. Pasteur for his valuable researches carried out through a long series of years. It may, at the present juncture, be mentioned that the distinguished recipient is now unable to perform the duties of professor, and that he retires upon an annuity of £240, to be added to the pension bestowed by national gratitude.

RURAL SANITARY WORK.

DR. FRANCIS T. BOND, medical officer of health for the Gloucestershire combined districts, read, on Saturday last, the 15th inst., a paper before the Society of Medical Officers of Health on the "Public Health Bill in its Relations to the Sanitary Requirements of Rural Districts." One of the chief objects of the speaker being to prove that rural should be invested with the same powers as urban sanitary authorities, he commenced by comparing the status and capabilities of the class of men constituting both kinds of boards, and contended that the average mind of a corporation or a society was no better than that of a board of guardians presided over by its chairman, who is usually a highly educated man, exercising probably (as vicar or rector) a considerable amount of influence over his colleagues at the board. Dr. Bond then entered into some details of the difficulties that occurred in rural districts as to the drainage of separate blocks of houses, or of providing them with latrine accommodation, and he complained of the continual evasion of sanitary enactments in consequence of the imperfect definition of "a nuisance." He believes that hospitals for infectious diseases are fully as necessary in rural as in urban districts, and drew attention to the noteworthy fact that pupils in schools, domestic servants, and trade assistants are conspicuous offenders in spreading epidemic diseases. The speaker concluded by "damning with faint praise" the Public Health Bill of the current session.

The discussion was commenced by the President, Dr. Letheby, and continued by Dr. Gilbert W. Child (who believed that Highway Boards would work better as rural sanitary authorities than boards of guardians), Dr. C. O. Baylis, Dr. George Ross, and Dr. W. T. G. Woodforde, medical officer of health for Berks combined district, who incidentally mentioned that great difficulty existed in rural districts in gleaning reliable information on sanitary matters, and the more so because some practitioners appear to ignore the sanitary laws altogether.

THE RANALD MARTIN MEMORIAL.

WE have received a circular enclosing the resolutions of the meeting that was held at Willis's Rooms by the friends and admirers of the late Sir Ranald Martin. It was very desirable that some steps should be taken to commemorate the services which the late distinguished officer rendered in advancing the science of tropical medicine and promoting army hygiene, and probably no more fitting method could have been devised than that which has been adopted—viz., the foundation of a Memorial Prize, to be competed for by the medical candidates of the three services at Netley, except, perhaps, that of making the competition open to all the medical officers, by which something might have been done in the way of practically advancing army hygiene. It cannot be too well known that it was mainly owing to the persistent representations of the late Sir Ranald Martin that medical officers were admitted to a proportionate share of those honorary distinctions conferred on other military and naval officers. Intending subscribers are requested to forward their contributions to the honorary secretary or treasurer.

A NEW SEWER TRAP.

DR. DUKES, the medical officer to Rugby School, has directed our attention to a new sewer trap, patented by Messrs. Potts and Co., of Handsworth, Birmingham, under the name of the "Edinburgh Air-chambered Sewer Trap." This trap, on the house side, communicates freely with the open air, and on the sewer side is placed also in communication with the air by a special shaft. As in Molesworth's trap and some other traps, the principal object of the new trap is to disconnect the house drain from the sewer, so that no sewer air shall pass along the house drain into the house, but under all circumstances which would determine such passage shall be diverted into the open air. This is effected in the new trap by the house drain opening into a chamber which communicates freely with the open air by a grating. The outlet of the house drain is closed by a flap which opens on the slightest pressure; and the grating is made double in order that charcoal may be placed in the interspace if thought desirable. A diaphragm in the chamber, depending from the grating, is believed to be effectual in determining an in- and out-current of air. The chamber opens into the sewer through an ordinary syphon, or midfeather trap, and on the sewer side of this trap provision is made for attaching a pipe to be carried to the roof of the house. The apparatus is another and very ingenious attempt to apply in common drainage practice the principle of breaking the direct communication of house drains with sewers, so long insisted upon by Mr. Robert Rawlinson. It promises to be a very effectual and easily applied means for this purpose; and it is to be welcomed as helping to make wholly indefensible the too common practice of builders and architects in overlooking the essential principle of safe drainage which this trap is designed to secure.

OUR SICK SAILORS.

IF subscriptions are not forthcoming for the Seamen's Hospital at Greenwich it certainly will not be the fault of the Fourth Estate. Our contemporary, the *Queen*, has now been enlisted in the cause, and reminds its readers that if a lady will undertake to obtain twenty annual subscribers of 5s. each, and if five hundred of these energetic fair ones can be found "the Committee will have such a sum placed at their disposal that their anxieties and difficulties will at once cease." Such is the announcement. We do not fancy that many fair readers peruse the pages of THE LANCET; but if this should "meet the eye" of any such, we adjure them to send their name to the secretary, and they will (according to the *Queen*) "receive from him a card with their names and addresses upon it, and a view of the old *Dreadnought*, together with a small pamphlet and full particulars of the scheme"; and (which is most important) the names of the ladies who have joined "the scheme" will positively and actually be published in the *Queen* of the following week!

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE annual election for the President, Vice-president, Secretary, and Council will take place on the first Monday in June. Mr. Joliffe Tufnell, on vacating the presidency, will be succeeded by Mr. Edward Hamilton, and he in his present position by Mr. J. Hamilton; whilst most probably Mr. Wm. Colles will be re-elected secretary. As regards the Council three vacancies will occur, Mr. Adams having died, and Messrs. Croly and Stapleton resigned. For these three seats the following candidates are mentioned—viz., Mr. Jacob, Mr. Wheeler, Mr. Ward, Mr. Corley, Mr. Kilgariff, Mr. Stoker, Mr. Bennett, Mr. McDowell, and perhaps two more, so that an exciting contest may be expected on the 7th of June.

SMALL-POX IN PARIS.

WHO would believe that, for years past, patients suffering from variola have been received and treated in the general wards of the hospitals of Paris? And yet such has been the case. Of late, small-pox has, however, been making such inroads in the French capital, that the physicians attached to the various hospitals have agreed to obtain from the authorities separate wards for small-pox patients. Nothing has as yet been settled, but, as reforms are at hand, this would be a good opportunity for building a special hospital for variolous patients. In the matter of fever hospitals, London can certainly compare advantageously with Paris, and the authorities of the latter city might well adopt our system of isolating infectious diseases.

THE HAMPSTEAD FEVER HOSPITAL.

THE Hampstead Heath Defence Committee has decided to ask for a Parliamentary Committee to investigate the action taken by the Metropolitan Asylums Board in reference to the site occupied by temporary hospital buildings in the locality, and the determination of the Board to retain that site for a permanent fever hospital against the wishes of the surrounding population. We trust that the Defence Committee will succeed in inducing Parliament to accede to its wishes, for it is now particularly desirable that the whole subject should be submitted to such an examination as a Parliamentary Committee can subject it to.

ELECTRICAL EXCITABILITY OF THE CORTEX OF THE CEREBRUM.

IN a provisional communication to the *Centralblatt*, Dr. Soltmann states that, from experiments he has made upon the dog, he has satisfied himself that no muscular movement can be produced by electricity in the new-born animal. Such movements first become perceptible about the ninth to the eleventh day after birth. The extent and form of the motorial region are both different in young animals as compared with old.

THE "DEVASTATION."

IT is officially reported that the alterations made in the ventilating arrangements of this ship added greatly to the comfort of all on board during her recent cruise in the Mediterranean. When the ship was overhauled before proceeding on her voyage, it was found that the rats had

settled in the air-pipes connected with the fans, and had choked up some of these inlets with nests and rubbish. These orifices are now covered with wire gauze, and other minor improvements have been effected. It is intended to put in at Malta two ventilating trunks to communicate with the smoke stacks; so that we may hope, after all, that this very awkward ship, and her sister vessel the *Glatton*, will at length become fairly fit for the healthy accommodation of officers and crew.

ONE of the most remarkable, and from many points of view lamentable, signs of the times, is the growing necessity which imposes military service on men by instinct and tradition utterly opposed to soldiering, and to whom the phrase "military glory" is but an empty sound. Even in peaceful England there are not wanting indications that the process of turning a nation into an army is looked upon with favour in influential quarters. Ticklish as the subject is, it cannot be doubted but that "feelers" in this direction continue to be made from time to time in the press. It may be taken that our universities are, on most of the momentous questions of the day, unerring indices of educated public thought. It is not therefore without significance that at the Union Society of Cambridge University a motion "That in the opinion of this House a system of compulsory military service is requisite in order to sustain England's prominent position among the European powers," was, after a long discussion, defeated by only a majority of 14 votes, the ayes being 54, and the noes 68. Although it might cause a scare in the Peace Society, and a frantic tootling of Pandean pipes, it would not be an utterly rash prediction to hint that in ten years' time or so military service will be obligatory on the manhood of this country.

SANITARY INSPECTORS appear to be taking an intelligent interest in the recently published amendments to the Public Health Bill. At a meeting of inspectors of districts in the counties of Northampton, Leicester, Rutland, and Bucks, held last week at Rothwell, a resolution was passed to the effect that a petition be presented to Parliament in favour of a clause securing more prompt action in the removal of nuisances, and also praying that it should be made compulsory on medical men to report any cases of infectious or contagious diseases that might occur within their practice. The Association, after carefully testing the different systems of sewage disposal, were of opinion that it is desirable to adopt generally some method of dry earth or ash privies under the entire superintendence of inspectors of nuisances, as the simplest means of disposing of village sewage.

DR. G. WILSON, medical officer of health for the borough of Warwick, in a report recently issued, confirms the observations of many other medical officers of health that the rate of infantile mortality is continually increasing throughout the country. In Warwick it appears to be unusually high. Dr. Wilson attributes a large waste of infant life to culpable negligence in nursing. The town is said to be overburdened with charities of every description, which fact probably forms a strong inducement to lazy and reckless mothers in the poorer classes to make it their home.

GOOD results continue to be obtained in India from the hypodermic injection of quinine in the treatment of malarious fevers, notwithstanding the difficulty experienced in inducing natives to submit to the operation. While in many parts of the world the practice is taken up with some amount of enthusiasm, we may here be permitted to state that as far back as 1863 Indian Army surgeons recorded their experiences of the procedure in our columns.

WE would draw the attention of public vaccinators throughout the country to the following case. It is, as far as we know, the first of its kind that has been carried before a legal tribunal. Dr. Henry Penfold, vaccinator for the Rainham District of the Milton Union, has been summoned for "that he, having successfully vaccinated a child named Laurie Cheeseman, born on the 16th September last, did not, within seven days after the performance of such vaccination, send a certificate of it to the vaccination officer for the district, as required by Form D of the Vaccination Act." After a prolonged investigation, the Court of Magistrates found Dr. Penfold guilty of a "technical" violation of the law, and imposed the nominal penalty of one shilling, and costs, which amounted to ten shillings. Dr. Penfold expressed his determination to appeal against the judgment.

IN *The Times* of Thursday last Mr. Seymour Haden again returns to the subject of the disposal of the dead. Appended to his letter on "Earth to Earth" is a statement by Sir George Burrows, Sir William Fergusson, Sir William Gull, Sir William Jenner, Sir James Paget, and Sir Thomas Watson, in which a not uncommon belief that persons may be buried during suspended animation or trance is corrected. They express their confident belief that the dread of the possible occurrence of such a case is without support in the medical experience of this country, and further state that the signs of death are as certain after a few hours' suspension of the vital functions as they can be after many days. We hope to notice the whole question at greater length next week.

DR. J. WYATT CRANE, medical officer of health for Leicester, reports that sixteen deaths from puerperal peritonitis occurred in the town during the year 1874. Erysipelas appears to have been unusually prevalent in the period, a visitation that goes a long way to explain the fatality to puerperal women. The number of deaths of children under five years of age amounted to very nearly half of the total mortality, a large proportion of whom were carried off by atrophy and congenital debility.

IN London, 1427 deaths were registered last week, including 24 from measles, 59 from scarlet fever, 13 from diphtheria, 86 from whooping-cough, 23 from different forms of fever, 15 from diarrhœa, and 267 referred to diseases of the respiratory organs. An ominous increase in the mortality from scarlet fever is observable. The disease is chiefly prevalent in the western and southern districts. Two fatal cases of typhoid were recorded in the Homerton Fever Hospital.

WE understand that Dr. Beard, one of the medical inspectors of the Local Government Board, has visited Chorley for the purpose of investigating the causes and conditions of an outbreak of enteric fever in the locality. In due time a report on the subject will, we have no doubt, appear. Meanwhile it is satisfactory to learn that the epidemic is subsiding.

THE special committee appointed by the Council of the Society of Arts to watch the progress of the Merchant Shipping Bill have submitted a report, the only sanitary recommendations in which refer to Captain Bedford Pim's Mercantile Marine Hospital Service Bill. The medical inspection of seamen is ignored.

THE rural sanitary authority of Goole have addressed a circular communication to other rural sanitary districts in England, suggesting combined action in order to petition Parliament as regards the unsatisfactory state of the law in the matter of water-supply in country districts.

THE Adulteration Act seems to be working most satisfactorily in Islington, and the inhabitants of that favoured quarter are to be congratulated on the honesty of the tradesmen of the district, and the consequent immunity from a host of dietetic dangers. From a recent quarterly report issued by Dr. Tidy, the analyst of the parish, we learn that, out of thirty samples of food and drink examined by him within the period, in only one instance was he able to detect adulteration.

WE understand that the return of unregistered medical practitioners doing duty afloat, which will be published very shortly, contains more than 200 names, and that of these a large proportion are under twenty-one years of age.

VENTILATION.

THE latest method of ventilation is claimed by its advocates to be a—we had almost said *the*—great discovery of the day. It is open to question, however, whether all the difficulties of ventilation are to be at once overcome by its aid. Still, Mr. Tobin's method is theoretically feasible enough, and that it will practically prove effective under certain conditions, we have no doubt; but its limits have yet to be determined, and the question is whether it will prove equally adequate and satisfactory for all classes of buildings under varying conditions of season in this climate.

Since the account of it first appeared in *The Times*, the method has been the subject of considerable controversy. From that account we gather that two claims are made in regard to it. First, that it is based on a natural law or principle, for the full recognition of which, and for its application and adequacy to fulfil all the purposes of ventilation, we are indebted to Mr. Tobin. Secondly, that the method of utilising or applying this principle is a new and, in reality, very simple one—namely, the introduction of fresh air in a vertical direction in sufficient quantities from without, either by means of vertical tubes or by certain arrangements in connexion with the window-sashes of the place to be ventilated, in such a way, and with such modifications of adaptation, that the streams of incoming air shall issue in such a position in relation to the ceiling as to have expended their force on reaching it. By this means the streams of air mingle gradually and insensibly with the inner air, instead of being precipitated directly downwards.

Now, in the first place, it is a misconception to suppose that there is anything new in the supposed discovery that ventilation depends upon and is regulated by the different densities of the internal and external atmosphere. Supposing the influence of wind excluded, this difference in density is the cause as well as the measure of the momentum and amount of the incoming denser cold air into that which is warmer and less dense within; and the current will take place until an equilibrium is reached. Practically, as well as theoretically, every natural system of ventilation is based upon this principle; and what is more, scientifically, the movements produced by unequal weights of air have been carefully studied, and, on the basis of our knowledge of the laws regulating the velocity with which air rushes into a vacuum, calculations have been made and formulæ framed of the velocity with which it would rush into a chamber in which the air inside has less pressure than that outside. Expressed simply, when cold air enters from without in a vertical or oblique direction, it goes upwards by virtue of its momentum, and this force will vary in proportion to the rarefaction or consumption of the internal air; and the current of air will maintain its direction so long as its *vis a tergo* is sufficient to overcome its downward tendency, due to its relatively greater weight. Still it does not follow, because Mr. Tobin can lay no claim to be the discoverer of a law or principle, that in various points of practical detail his method of utilising it may not be novel, or that he may not have been led to the discovery that certain other methods commonly adopted were incorrect, or practically so liable to objections arising from disturbing causes as to defeat the object in view, or at any rate interfere with its being efficiently worked out.

From Mr. Tobin's observations and experiments in a room into which he had inserted his tubes, but which was otherwise hermetically sealed, we gather that no inflow ensued so long as the density of the air outside and in remained the same, but that it took place as soon as the lamps were lighted. If the rooms were really hermetically sealed, it strikes us that one of the two tubes employed must have acted as an outlet. Be this as it may, however, whether the place occupied be a church or a bandbox, it must become fouled in time by the products of respiration and combustion unless some way be made for their escape. And this is, of course, acknowledged, for the point of the experiment is to prove that if we take care of the inlets the outlets will take care of themselves, and that for all practical purposes the chimney throat will always suffice for the latter purpose. As regards this, however, we have our doubts, for the amount of outlet must, we imagine, be determined by the size of the room and the number of occupants. For an ordinary room a fireplace would, doubtless, suffice, except for gas fumes, because the foul air would be drawn down by the chimney; but for a hospital ward of any dimensions, a barrack-room, or any apartment with varying occupation, we must venture to doubt whether this single outlet, unaided by any shaft, would prove adequate to maintain the purity of the contained air, until the contrary has been shown by chemical analysis. The ward of a hospital is fouled not only by the carbonic acid, but the moisture exhaled contains a quantity of excreted animal matter. Assuming that 3000 cubic feet of air per hour be requisite for each patient, it is considered necessary to provide a sectional inlet area of probably about twenty-four square inches, and the same amount for outlet, the latter by fireplaces and ventilating shafts. The area of supply aperture of the Herbert Hospital is 8 square inches in the lower and 10 in the upper wards for every 1400 cubic feet of air-space; but this takes into account the use of windows. By Mr. Tobin's method a supply of fresh air is introduced from without at or under the floor level, and passed up vertically into the room or hall, so that it may diffuse itself among the upper strata of air, and so obviate all sensible currents. There are no special outlet-arrangements for foul air beyond the usual roof openings in courts and halls and the action of a fireplace. It may be that an erroneously exaggerated notion has been commonly entertained regarding the importance of outlets; but it would be quite premature to form any conclusions on this point until we have far more accurate data than we at present possess regarding the atmosphere of a hospital, barrack, or large school ventilated by vertical tubes and a fireplace. It is claimed for the new method that the incoming currents are vertical; but this is by no means a new feature in ventilation. So is the current that strikes on a Sheringham ventilator at an angle of 45°, and the currents from the fireplaces or heating apparatus in hospital wards are commonly made to discharge vertically.

M. Léon Duvoir's system, as applied to the Parisian hospitals, is essentially identical with that now proposed, except that the vertical inflow of fresh air supplied is cold in summer and warm in winter. And this brings us to what we cannot help thinking will prove the most important defect in the new method. We can understand that no account is taken

of winds, sunshine, locality and exposure of the building, and other conditions which are practically found, however, to exercise a very important influence under other methods, but no provision is made for warming the air in very cold weather. We contend that a large quantity of cold air can no more be admitted into an apartment without lowering its temperature than cold water can be poured into hot without doing the same thing. It cannot be contended that two or three thousand cubic feet of fresh air per bed per hour can be passed into a hospital ward at 23° F. (a not very unusual winter temperature at night) without risk or great discomfort. At any rate, it has never yet been done. Either the air-supply must be restricted, or it must be warmed. In the Lariboisière and other hospitals in France and Germany, and in America and this country, the latter is usually done. Every ward in the Herbert Hospital has two fireplaces in the middle line of the ward, which, in winter, discharge *vertically* into the ward a very large amount of air warmed by terra-cotta cells to 60° or 65° F.; and in the barrack-rooms, also, of this country, the louvres are so adjusted that the inflowing air, in winter heated to about 60°, is discharged vertically about a foot below the flat of the ceiling. We have been assured of the fact, on excellent authority, that the required amount of 1200 cubic feet per man per hour in a barrack-room, and 2000 cubic feet per bed per hour in a hospital, cannot be given without heating the inflowing air in winter.

Mr. Tobin's arrangement for ventilating through the window-sash is a modification of, and an improvement on, other old and simple expedients; and, both by this means and by his vertical tubes, a large amount of fresh air may be introduced without draught. Of this we have never had the least doubt; but this, as we have said, is not by any means all that is required, and a hospital ward during the summer does not furnish an adequate test. The rates of movement, temperature, and chemical composition of the air under different conditions of wind and weather require to be systematically examined. To sum up the matter:—The method would undoubtedly prove useful for a certain class of buildings, and in some cases it would have the advantage of supplying fresh air where no other method could be applied. It would be well adapted to many courts, halls, theatres, and other places of a similar description where warmed air is not needed, and to private houses where the action of the fireplaces would cause the necessary renewal of air, and plenty of fuel was available for warmth of the room. But in our climate, during the winter months, it will, in our opinion, be found necessary to make provision for warming the fresh air, otherwise the temperature must be unduly lowered. The law on which the method is founded is no new discovery, nor is the principle of using vertical currents original, but it is a new adaptation of that principle by vertical tubes, which would undoubtedly have certain advantages when it happened to be the easiest and cheapest method. Of one thing, however, we may be sure—that, after all the public discussion which has taken place, a great many people will now be induced to try this method who would never, under any circumstances, have tried any other method of introducing fresh air into their habitations.

THE BROWN INSTITUTION.

DR. SANDERSON'S report upon the work of the Brown Institution during the year 1874 shows that 4224 animals were brought to the institution for advice and treatment; of these 2971 were horses, 922 dogs, and 331 other animals. Of the horses, 1446 were new cases, of the dogs 461, and of the smaller animals 243.

The classification of the cases yields the following percentages:—Diseases of the organs of locomotion, causing lameness, 33 per cent.; wounds, bruises, abscesses, and fractures, 9 per cent.; diseases of respiratory organs, chiefly catarrh, pleurisy, and pneumonia, 21 per cent.; diseases of other internal organs and of the nervous system, 14 per cent.; diseases of the skin, 10 per cent.; glanders and farcy, 4 per cent.

Of the whole number of horses treated, about 80 per cent. of the diseases could be directly traced to injuries or overwork, or to neglect either as regards nourishment or stable accommodation.

During the past year the number of cases of canine rabies seen at the institution has been greater than at any previous period. On inquiry it was almost invariably found that the animals affected had been allowed to run at liberty about the streets, and in a considerable portion of the cases the owners knew that the animals had been bitten by other dogs. During the year sixty-three animals were admitted into the hospital.

Perhaps it is not generally known that the scientific researches of the past year have been for the most part undertaken at the expense of Government and at the instance of the medical officer of the Privy Council. The committee are willing to further the prosecution of any similar investigations, either by private individuals or public bodies, provided that such investigations relate to the diseases of animals useful to man, and are of such a character as to be likely to yield valuable results.

By way of indicating one of the directions which might be given to such inquiries, Dr. Burdon-Sanderson refers to the fact that there are several of the diseases which are most destructive to stock in this country, in respect to the nature and causes of which much remains to be discovered by systematic study.

Another subject brought under notice is that of the grouse disease. Setting aside for the moment the question how far wild animals are included in the scope of the institution, it appears that pathological questions of such interest are involved in the determination of the nature of the grouse disease that the managers would on this ground alone be justified in devoting the means at their disposal to its investigation.

ROYAL MEDICAL BENEVOLENT COLLEGE.

THE twenty-second annual meeting of this institution took place at its Rooms in Soho-square on Wednesday last, Dr. Jonson in the chair, supported by Mr. Henry Hancock, the treasurer, Mr. Erasmus Wilson, Drs. Carr, Westhall, Felce, Broadbent, J. W. Miller, and Messrs. Hogg, Francis Hird, France, Macpherson, Liddle, Propert, B. W. Powys, &c. &c.

The annual report, which was read by the secretary, Mr. R. Freeman, stated that financially the past year was almost unexampled in success. The chief interest of the report was that portion which related to the mode of conducting the elections; the reception of the deputation, headed by Sir Charles Trevelyan, and the conclusion arrived at by the Council, which, notwithstanding the fact that 1342 subscribers have signed a memorial in favour of change, still think that no other change is needed than the option given to subscribers to have their names placed in a separate list of governors, who desire that they may not be canvassed. It is a curious fact that, notwithstanding all the governors have been appealed to on this question, very few have up to the present time signified their wish to be placed in this special list. The general condition of the school was reported as most satisfactory, the numbers of pupils exceeding those of former years.

DR. CARR moved the adoption of the report, and congratulated the governors on its almost exceptionally satisfactory character. A sound and healthy progress marked every phase of the life of the College. What, then, could be objected to? Surely if any governors had come intending to suggest change they must feel that none was wanted.

MR. LIDDLE had no objection to be canvassed, but he felt that the right persons do not get elected. It was known that certain members of the Council had influence which would be exerted on behalf of certain candidates, and, there-

fore, improvidence was encouraged. It was a source of deep pain to him that there were so many candidates whilst there were so few vacancies.

Dr. BROADBENT, as a member of the deputation, denied that any discourtesy had been shown to it. He felt, however, that a change was needed in our manner of conducting elections; and it was a scandal that some cases had received the support of governors, whilst in other cases it was deeply to be deplored that no help could be found. Candidates, unless they had friends and money, could not succeed. During the process of an election he had been deeply pained at the sight of widows and their sons imploring help. He trusted this in future would be prevented, and he hoped that some method would be accepted which would promote the election of the worst cases. He could not agree with Dr. Carr, who stated that the College was well fulfilling its mission. Looking at the number of candidates, 41, and the number to be elected, 4, and assuming that each candidate brought at least £10, that would represent a large sum *en bloc*, whilst the sum returned, accepting the value of each scholarship at £60, would be only £240. Surely this relationship was entitled to very serious reflection.

Mr. MASON held the opinion that the existing voting system was a most unrighteous one, and, if it could be destroyed, great good would follow.

Mr. HIRD assured the meeting that every member of the Council would accept any suggestion for simplifying the conduct of elections, if they had the power; but it was important to bear in mind that the election of candidates is regulated by definite laws laid down by Act of Parliament, and which cannot be infringed. To make any change in these fundamental laws we must obtain a new Act. Every subscriber in paying his subscription purchases a privilege which cannot be taken from him.

After this lengthened discussion, the Chairman submitted the motion, the acceptance of the report, which was passed unanimously.

The other proceedings were of nominal character, including a vote of thanks to the Chairman.

Obituary.

JOHN RIDLEY, M.D., F.R.C.S.

SPRUNG from an old family, which had for generations occupied a good position in Tullamore, King's County, John Ridley identified himself throughout his life with the interests and welfare of his native town. He studied at the Universities of Dublin and Glasgow, and became L.R.C.S. Irel. in 1837, M.D. Glasg. in 1838, F.R.C.S. Irel. in 1844, and L.K.Q.C.P. Irel. in 1860. He then commenced practice in Tullamore, where he quickly gained distinction as an able physician and surgeon. In 1852 he was appointed medical officer of the Tullamore Dispensary District, and in 1859 (on the death of his father-in-law and former master, Dr. George Peirce) surgeon to the King's County Infirmary. He was also medical officer to the County Gaol and to the local Army and Constabulary Corps. For many years he enjoyed a most extensive practice, and most of the leading members of the profession in Dublin were well acquainted with his name from hearing their patients speaking of him on all occasions in terms of praise. Unfortunately he was too devoted to work. From year to year he toiled on, never thinking of himself or of the necessity for occasional rest. And so it happened that, late last autumn, the earliest symptoms of failing health became developed. A catarrh, early in November, proved very intractable, and seemed to have its origin in a weakened state of the circulation. A second attack in January necessitated rest and change. He went to Dublin, whence he returned at the end of March, apparently better; but he suddenly became worse, anasarca supervened, and on the 3rd inst. he passed away, at the age of fifty-nine. The love and respect borne to him were exemplified by the immense concourse from all classes of society which followed his remains to their last resting-place in the picturesque cemetery of Clonminch, about a mile from Tullamore. In him the rich have lost a skilful physician and trusty counsellor; the poor, a sympathising and faithful friend. Of the irreparable loss which his death is to his family it is not our province to speak.

ROBERT LAW, M.D.

DEATH has been very busy of late among the seniors of the profession in Dublin. Within a few months we have had to record the deaths of Dr. Hargrave, Dr. Ireland, Mr. Adams, and now of Dr. Law, one of the most highly esteemed members of the profession, who departed this life on Friday, April 23rd, at the ripe age of seventy-seven years. After passing through the undergraduate course with great credit, obtaining a scholarship in 1817, he graduated as A.B. in 1819. He took the degree of M.B. in 1822, and of M.D. in 1857. He joined the King and Queen's College of Physicians in 1827, and was elected a Fellow in 1829. He was always a diligent student, and contributed papers of great value to different journals and Transactions. The appointment of physician in ordinary to Sir Patrick Dun's Hospital afforded him excellent opportunities of minute and careful observation of disease, and its results as shown by post-mortem examinations. Of these he availed himself, as we can testify, with great zeal and talent, acquiring for himself a very respectable collection of morbid specimens. The very high character he obtained led to his election to the professorship of the Institutes of Medicine, in succession to the late Dr. Graves, and which he held with great credit until his illness. In the year 1873 he had a paralytic attack, since which time he has been laid aside from all professional work. But if the former portion of his life illustrated the earnest and diligent worker, the latter equally exhibited his patience and thankfulness under heavy trial. Beloved by all, he has gone to his rest, leaving behind him none but pleasant and profitable memories.

WILLIAM HAMMOND, M.D.

BORN in Brechin in 1832, Dr. Hammond studied in Edinburgh, and became L.R.C.S. Edin. in 1858, and M.D. St. Andrews in 1861. He began practice in his native town, and continued there till 1870, when he removed to Edinburgh. A few weeks previous to his death he had obtained an appointment as a district medical officer of the City parish, Edinburgh, after a very hard contest, and had just entered on his duties when he was smitten down with typhus fever, caught, it is believed, when visiting among the poor. Although the attack was a severe one, his previous robust health favoured the hope that he might rally, which was further strengthened when it became evident that he had passed the crisis of the fever. All appeared to be going on well till 1 o'clock on the morning of April 27th (the nineteenth day of the fever), when he suddenly succumbed to an attack of syncope, at the early age of forty-three.

Dr. Hammond's death adds another to the many examples of valuable lives sacrificed in the faithful performance of medical work involving the relief of the suffering poor. To die thus is to die nobly, and while such events cannot but suggest many painful reflections, they bear impressive testimony to the self-forgetting readiness ever exhibited in the ranks of the profession to face danger where duty calls, and distress is to be relieved.

Dr. Hammond has left a widow and one young child. It is melancholy to add that within a week after Dr. Hammond's death his younger brother also sank under an attack of typhus with which he had been seized during the doctor's illness.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the required examinations for the diploma, were duly admitted Members of the College at meetings of the Court of Examiners on Tuesday and Wednesday last:—

Barrow, Arthur Haynes, L.S.A., Denbigh-place.
Barrow, John, L.S.A., Hilldrop-crescent, Camden-town.
Bell, Charles Edward W., Exeter.
Bernays, Herbert Leopold, L.S.A., Chatham.
Booth, John Bennion, Lancaster.
Brown, Thomas, Kennington-park-road.
Burrows, William Seymour, Brighton.
Edwards, Arthur Elliott, Antigua, West Indies.
Fenwick, Kenneth Meander, M.D., Kingston.
Ferrand, Edward, Granville-square.
Hall, William Henry, Caterham, Surrey.

Harpur, Robert Russell, Holbeach, Lincolnshire.
Hayward, Frederick Dell, Sandown.
Henderson, Edward Guy, M.D., Belleville, Canada.
Malham, George Bessant, Oxford.
Miles, George Edward, Jamaica.
Molson, William Alexander, Montreal.
Newton, William Thomas, L.S.A., Lakenheath.
Pepper, Augustus Joseph, Barrowden.
Phelps, Arthur Martin, Camden-town.
Piggott, Allen, L.R.C.P. Edin., Beckingham, Essex.
Richards, Robert Crout, Portreath, Cornwall.
Ritchie, John L., M.B., Halifax, Nova Scotia.
Seward, William Joseph, L.S.A., Hereford.
Sherd, Henry Arthur, L.R.C.P. Edin., Sheffield.
Smith, Maurice Henry, Queen-Anne-street.
Spark, John, Lee, Kent.
Theed, William Cawood, L.S.A., Wokingham.
Thompson, Harold, L.S.A., Oxford.
Walsh, Henry W. D., Watford, Herts.
Weakley, Samuel J. J., Upton.
Wharton, Henry Thornton, Boundary-road.
Williams, Edward Hanbury, Brighton.

The following gentlemen passed the primary examination in Anatomy and Physiology on the 13th inst.:—

J. C. Keer, T. Hammond, C. H. Keep, V. A. Jaynes, Guy's Hospital; T. Baker, H. Langton, T. G. Prosser, J. F. Woods, J. Russell, G. R. Master, H. X. Browne, J. A. B. G. Messum, St. Bartholomew's Hospital; E. M. G. Whittle, Cambridge; G. S. Johnson and J. F. Grayling, King's College; John Kirkpatrick, Toronto and Westminster; A. Q. Silcock, University College; J. W. D. Dallaway, St. George's Hospital; and B. Penwick, London Hospital.

Of the 99 candidates examined on the 11th, 12th, and 13th inst., 27 failed to satisfy the Court of Examiners, and were referred to their anatomical and physiological studies for three months. The total number of candidates admitted to the primary examinations for the Membership during the last and present months was 455, of which 117 were referred. The number during the corresponding period of last year was 442, and the rejections 133. The next primary examination for the membership will take place in July.

Professor Henry Lee, F.R.C.S., will commence his course of six lectures on "Syphilis and on some Local Diseases affecting principally the Organs of Generation," on Monday, the 31st inst., at 4 o'clock, in the theatre of the College.

APOTHECARIES' HALL. — The following gentlemen passed their examination in the Science and Practice of Medicine and received certificates to practise on May 13th:—

Bradford, Peter, Hanley, Staffordshire.
Manders, Horace, The Green, Marlborough.
Pitt, Richard Joseph, Wellsbourne, Warwick.
Potter, Henry Percy, Denmark-hill.
Sandford, Horace Charles, Hereford.

The following gentlemen passed the Primary Professional Examination on the same day:—

Edwin Alaric Lewis, University College Hospital; Charles Goodridge Heard, St. Bartholomew's Hospital; Lawrence Potts, Charing-cross Hospital.

Medical Appointments.

ADAMS, E. B., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Bungay District of the Wangford Union, Suffolk, and Medical Officer of Health for the Bungay, or No. 2 Sub-district of the Wangford Rural Sanitary District, vice Barkway, deceased.

APPLEYARD, J., M.B., L.R.C.P.L., M.R.C.S.E., has been appointed a Resident Medical Officer to the Bradford, Yorkshire, Infirmary, vice Kilbride, resigned.

ARNOLD, H., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer for the Bradfield District of the Hardingstone Union, vice Dudley, deceased.

BETHUNE, D., L.R.C.P.Ed., L.M., L.F.P. & S.Glas., has been appointed Medical Officer to the Stockton-on-Tees Friendly Societies' Medical Association, vice M'Donnell.

COURTENAY, J. H., L.K.Q.C.P.I., L.R.C.S.I., L.M., has been appointed a Government Medical Officer in Jamaica.

CROLY, R., L.R.C.S.I., L.K.Q.C.P.I., L.M., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Tinahely Dispensary District of the Shillelagh Union, Co. Wicklow, vice Rogers, resigned.

EVERSHED, A., M.R.C.P.L., has been appointed Physician to the North London Hospital for Consumption &c., vice Johnston, retired.

FERGUSON, D., L.R.C.P.Ed., L.R.C.S.Ed., L.M., has been appointed Medical Officer and Public Vaccinator for the Mallwyd District of the Dolgelly Union, vice Griffiths, deceased.

HUGHES, T., M.D., M.R.C.S.E., has been appointed Medical Officer to the Dinorwic Quarry, Carnarvonshire, vice Rees, resigned.

JACKSON, H., M.R.C.S.E., has been appointed Medical Officer for No. 4 District of the Barnstaple Union.

LOGAN, W., M.D., has been appointed Certifying Factory Surgeon for Bingley, vice Rutherford, resigned.

LYDDON, J. H., L.R.C.S.I., has been appointed Medical Officer to the Friendly Societies' Medical Institute, Norwich, vice Sheppard, appointed to the combined Friendly Societies, Harrogate.

MAC KECHNIE, E. A., M.B., C.M., has been appointed Medical Officer and Public Vaccinator for the Parish of Rutherglen, Lanarkshire, vice Turnbull, resigned.

MURRAY, T., L.K.Q.C.P.I., L.M., L.S.C.S.I., has been appointed Medical Officer to the Sligo Union Workhouse, vice Powell, resigned.

NIXON, H. K., L.R.C.P.Ed., L.M., L.R.C.S.I., has been appointed Apothecary to the Sligo Dispensary, Sligo Union, vice Devany, resigned.

NUNN, P. W. G., L.R.C.P.L., M.R.C.S.E., has been appointed Medical Officer of Health for the Bournemouth Urban Sanitary District, vice Stevens, whose appointment has expired.

O'FARRELL, H., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Kiltomer Dispensary District of the Ballinasloe Union, Co. Galway, vice Sanderson, appointed Parochial Medical Officer for Drymen, Stirlingshire, and Abberfoyle, Perthshire.

RIDLEY, J., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer and Registrar of Births &c. for the Tullamore Dispensary District of the Tullamore Union, King's County, vice John Ridley, L.K.Q.C.P.I., F.R.C.S.I., resigned, and since deceased; also Sanitary Officer.

SPARROW, T. F., M.D., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Crossakiel Dispensary District of the Oldcastle Union, Co. Meath, and Medical Attendant to the Royal Irish Constabulary, vice Croly, appointed to the Tinahely Dispensary District of the Shillelagh Union, Co. Wicklow.

STEWART, D. P., M.R.C.S.E., has been appointed Certifying Factory Surgeon for Kirkintilloch, vice Wilson, resigned.

VENN, A., M.D., has been appointed Senior Obstetric Assistant to St. Bartholomew's Hospital, vice W. Hope, M.D.

WALKER, W., M.R.C.S.E., L.S.A.L., late Physician's Assistant, has been appointed House-Physician to the Royal Infirmary, Manchester.

WATSON, A. M., M.D., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Penistone District, and Medical Officer to the Workhouse of the Penistone Union, Yorkshire; also Medical Officer of Health for the Penistone and Thurlstone Urban Sanitary District,—all vice Leigh, deceased.

WAY, W., M.D., M.R.C.S.E., has been appointed Medical Officer for the Upton District of the Wirral Union, vice Peirce, resigned.

Births, Marriages, and Deaths.

BIRTHS.

ATTHILL.—On the 15th inst., the wife of W. E. B. Atthill, L.R.C.P.L., M.R.C.S.E., of Waterbeck, N.B., of a daughter.

BARRACLOUGH.—On the 14th inst., at Dulwich-road, Herne-hill, the wife of R. W. Sutton Barraclough, L.R.C.P.L., of a daughter.

DAVY.—On the 9th inst., at Elm-grove, Terenure, Co. Dublin, the wife of E. W. Davy, M.D., of a son.

LARKIN.—On the 17th inst., at Trinity-square, Southwark, S.E., the wife of Frederick George Larkin, M.R.C.S.E., of a son.

M'NAUGHTAN.—At Queen-square, Blackpool, the wife of Dr. M'Naughtan, of a daughter.

PATERSON.—On the 14th inst., the wife of R. Haldane Paterson, L.R.C.P.Ed., M.R.C.S.E., of Scunthorpe, Lincolnshire, of a daughter.

ROWLAND.—On the 14th inst., at Malvern Wells, the wife of H. Mortimer Rowland, M.D., of a daughter.

MARRIAGES.

EMMS—GREEN.—On the 11th inst., at St. Peter's, Brighton, Alfred Wilson Emms, M.R.C.S.E., to Ada, daughter of the late Henry Green, Esq.

KEBBELL—TAYLOR.—On the 13th inst., at the Parish Church, Brackley, Alfred Kebbell, M.R.C.S.E., of Flaxton, Yorkshire, to Keria, daughter of E. Taylor, Esq., of Brackley, Northamptonshire.—No Cards.

DEATHS.

GRIFFITHS.—On the 5th ult., Richard Griffiths, M.R.C.S.E., of Aberhiriaeth, Cemmaes, Montgomeryshire, aged 45.

HEY.—On the 10th inst., at Gledhow-wood, Leeds, Wm. Hey, F.R.C.S.E., aged 78.

HORTON.—On the 12th inst., at Meanwood, near Leeds, Richard G. Horton, M.R.C.S.E., aged 69.

HUSTON.—On the 11th inst., at Tynan, Co. Armagh, Chas. Todd Huston, L.R.C.S.I., aged 50.

MOORE.—On the 15th inst., at Brixton-road, S.W., S. W. Moore, F.C.S., &c., late Lecturer and Demonstrator on Physiological Chemistry at St. George's Hospital, aged 27.

PETER.—On the 7th inst., at Longford, David Chamney Peter, M.D.

SAWYER.—On the 12th ult., James Hewitt Sawyer, M.D., of Stillorgan-road, Donnybrook.

SHANNON.—At Monaco, France, George Shannon, M.D., of Wigton, Cumberland.

WEBBER.—On the 12th inst., at Ramsgate, William Webber, F.R.C.S., formerly of Norwich (founder of the Royal Free Hospital for Incurables at Norwich), in his 76th year.

WHITLING.—On the 16th inst. (Whit-Sunday), at Croydon, Ernest Storrs, second son of Mr. and Mrs. H. Townsend Whitling, aged 5 months.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*]

BOOKS ETC. RECEIVED.

Dr. Bastian: Paralysis from Brain Diseases.
Transactions of the National Association for the Promotion of Social Science.
Dr. Vogel: The Chemistry of Light and Photography.
Gray's Anatomy.
Guy's Hospital Reports.
St. Thomas's Hospital Reports.
Dr. Dobell: On Diet and Regimen in Sickness and Health.
Dr. Forbes: Two Years in Fiji.
Dr. Tyson: Practical Examinations of Urine.
Mr. Bancroft: The Native Races of the Pacific States of North America.

Notes, Short Comments, and Answers to Correspondents.

VITAL STATISTICS ABROAD: HAMBURG.

THE recent increasing appreciation of the value of vital statistics in the United Kingdom is undoubted, and it is evident that both on the Continent and in the United States this subject is not now neglected. The Registrar-General in his Weekly Returns, through the co-operation of various authorities, is now enabled to publish weekly information relating to the births and deaths in twenty-five foreign cities in Europe, Asia, and America. Sanitary organisation and legislation in this country has, doubtless, been stimulated by the Registrar-General's publications, and the means now afforded of comparing our death-rates with those prevailing abroad, besides being useful to us, are certainly leading to sanitary reform in various cities of Europe long distinguished by their insanitary condition. The most recent addition made to the Registrar-General's list of foreign cities is Hamburg. This city is not only the second largest in the German Empire, but, being in daily communication by steamer with London, its health cannot be altogether a matter of indifference to us. A summary of the vital statistics of the city and State having reached us, it may not be without interest to note a few of the figures it contains. In form it is unpretentious, consisting of a single leaflet printed on one side; but the tables are well arranged, contain much information, and the promptness of its publication (for it bears date 11th February) is not the least of its merits. The population of Hamburg State at the end of 1873 is given as 357,453, of which 315,000 lived within the town and its suburbs. The marriage rate—that is, the rate of persons married—was equal to 23·8 per 1000, considerably exceeding the rate in London; 10·8 per cent. were civil marriages, the proportion of these marriages having increased steadily from 1·4 per cent. during the ten preceding years. The births recorded in the year (inclusive of still-born) were equal to a rate of 41·3 per 1000, and included 10·2 per cent. which were illegitimate. There are two points relating to the births respecting which the information in this Hamburg return is more complete than those published by our Registrar-General. The number of still-born cases are given, from which it appears that their proportion to total births averaged 4·6 per cent. in the five years 1869—73, and was 4·3 per cent. in 1874; and of the 14,553 cases of childbirth during the year, 191, or 1·3 per cent., were cases of plural birth; 180 twin births, and 3 cases of triplets occurred. Our English statistics do not afford us the means of comparison either as regards the proportion of still-births or of plural births. The statistics of mortality in the Hamburg summary are less complete than those relating either to the marriages or the births. The rate of mortality during the year was equal to 27·0 per 1000, against 25·6 and 29·4, the average rates, in the two preceding periods of five years. In London the death-rate was only 22·5 per 1000. No figures are, however, given showing either the proportion of deaths occurring at different ages, or the various causes to which the deaths were referred. This information will probably be published subsequently to the table now under notice.

Sartor Resartus, (Murree.)—We are extremely sorry we cannot comply with our correspondent's request.

COMMUNICABILITY OF DISEASES TO THE LOWER ANIMALS, ETC.

To the Editor of THE LANCET.

SIR,—Mr. Fleming in your last issue mentions a case where whooping-cough appeared to have been transmitted to a dog from a child, which reminds me of an instance where a cat was the subject of the same disease.

While on a visit last spring at a medical friend's house, whose young family had suffered severely from whooping-cough, my attention was drawn to a young cat, some eight or nine months old, which my friend stated had caught the whooping-cough from the children. The animal was evidently ill, and it required but little observation to recognise in it all the characteristic symptoms of the disease. The cat, being young, spent the greater portion of its time in the nursery as a playmate with the children, and was, as a matter of course, exposed to the full power of the infection.

With regard to diphtheria, although during a severe epidemic I attended somewhere about 300 cases, I never witnessed any case of its transmission to the lower animals. I have known two cases of small-pox in dogs where undoubtedly the disease had been contracted from the human being. They occurred in a farm-house, where three fatal cases of a malignant type had taken place, and when in attendance I was asked by the farmer whether it was possible for dogs to take the disease, stating that his dogs were ill, and he believed that they were suffering from small-pox. On examining them, his suspicions were found correct, the skins of the animals being covered by an eruption, and which, on opening their mouth and everting their lips, presented the true pustular character of the disease.

It is not my intention to enter into the controversy as to the identity of croup and diphtheria. The fact of having attended about 300 cases of diphtheria during a frightful epidemic of the disease, attacking persons of all ages alike, goes far to prove its terrible infectious and distinctive character, and its non-identity with croup; my first introduction to it being at a farm-house in conjunction with another practitioner, where five fatal cases occurred within the space of a week, the farmer, three children, and a servant-girl being the victims. The epidemic alluded to took place during the years 1858-59, commencing in the spring of 1858, continuing without interruption through the summer, autumn, winter, and spring of 1859, and irrespective of all hygienic conditions.

Your obedient servant,

Cardiff, May 11th, 1875. MAURICE G. EVANS, M.D.

COLOURING INGREDIENTS OF THE URINE.

DR. BOGOMOLOFF has recently published an essay, in which he states that, in his opinion, all the various substances which when treated with mineral acids give yellow or red coloured compounds, which dichroize into green, have an absorption stria between b and F, present the spectral peculiarities of urobilin, and are consequently identical with it. Urobilin is best obtained from urine of a pale-yellow or bright-yellow colour. As the colour of the urine becomes more reddish-yellow, other colouring compounds are obtained of red, indigo-blue, emerald-green, and other tints. Pathological urine presents many different shades of colour. The higher the temperature of the body the more urobilin is formed, whilst other colouring matters almost disappear. He describes the character of the colouring matter of the urine in cholera and in certain diseases of the liver, and adduces reasons for holding that the biliary acids play an important part in the formation of the normal and pathological urinary colouring matters. He shows, further, that injections of the biliary acids into the blood are followed by phenomena similar to those which occur in disease; whilst the injection of biliary colouring matter and of blood colouring matter are followed only by negative results. Lastly, he finds that injection of indican solution produces the same results as the injection of the biliary acids—namely, increase of the indigo-blue colouring matter of the urine.

Inquirer, (Walsall.)—It is generally considered to be superior in value.

NITRITE OF AMYL.

To the Editor of THE LANCET.

SIR,—Allow me to supplement the observations of Mr. Bader upon the effects of nitrite of amyl by recording the following case.

I was summoned about half-past eight A.M. one morning to see a strong, healthy little girl, about four years old, who two hours before had, unknown, got out of bed and swallowed over three ounces of pure whisky. I found her comatose, feeble pulse, &c. I managed to get down an emetic of sulphate of zinc, which, however, scarcely acted. Considering the age of the child, the amount of alcohol taken, and that upon an empty stomach, the case seemed hopeless, and, as I was unavoidably called elsewhere, my friend, Dr. Lupton, kindly undertook the temporary care of the case. I returned at one P.M., when he reported that the child became shortly deeply comatose, with failing respiration and circulation. He first applied the poles of an electro-magnetic battery, which for some time produced a beneficial effect, but at last failed altogether to either excite increased respiration or cardiac action. He then administered by inhalation a few drops of nitrite of amyl, with the effect of increased action of the heart and increased respiration; but, the effect soon passing away, the administration had to be renewed. We then tried again the electro-magnetic apparatus, but without the smallest perceptible effect; but upon the amyl being again administered, its peculiar effects were instantaneously manifested. This was, therefore, continued whenever the powers of life seemed almost to be at the lowest verge, and so by continuing its exhibition carefully life was kept in the child till the alcohol was gradually eliminated. It was highly interesting to see the gradual coming back to active life. First the respiration and circulation gained innate strength and force; then the eyes became gradually sensible to touch, and the pupils to the action of light; then the deep sighing inspiration took place at intervals, and finally the look of consciousness gradually returned, until at last the child smiled as she recognised her parents, and took nourishment at about five P.M. I had, however, warned the parents that it was quite possible that the known irritant effects of the remedy might produce inflammation of the lungs, and this proved to be the case; for about seven P.M. her breathing became oppressed, acute capillary congestion actively set in, with an abundant secretion of a muco-purulent nature, and she died in five hours. Doubtless the alcohol had something to do with the pulmonary attack; but I do not think that the attack would have terminated fatally in so short a time from alcoholic effects alone. In all about two drachms of nitrite of amyl were used, though a large portion would have been evaporated.

Being much struck with the effects of this drug, I experimented subsequently upon three rats. To the first was administered several minims of dilute hydrocyanic acid of the British Pharmacopœia. It became quickly insensible, with the customary convulsive seizures. When respiration and circulation had almost ceased, a drop of nitrite of amyl was placed on the nostril. The effect was instantaneous; the heart commenced violently to beat, and respiration speedily became thoroughly established; indeed so lively did our subject become that it had to be put back into the nap. A second time it was subject to the same treatment; but now the nitrite of amyl was not administered until respiration had ceased and the cardiac impulse could scarcely be felt, but the result was the same. A third time it was experimented upon, and with a favourable result. With the two remaining rats I experimented with chloroform, but in both cases I fear that I administered far too much; for though the nitrite of amyl was fully administered, and also subcutaneously injected over the cardiac region, I failed to resuscitate them.

I have not had an opportunity to make any further experiments; but from the case above recorded I cannot but think we have a very valuable remedial agent in all those cases of acute poisoning where death would inevitably ensue from failure of respiration and circulation either from apnœa or coma. The effects are so instantaneous that I am strongly of opinion that if administered in extreme cases of drowning, gas-poisoning, overdose of chloroform, opium, &c. (provided the contractile power of the heart has not been completely annihilated), many lives might be saved if but a small quantity could be inhaled, even by means of artificial respiration. There will, I apprehend, be always danger in the remedy if much has to be used; but in almost hopeless cases it is better to run the risk of pulmonary inflammation rather than suffer the patient to die.

Trusting these few observations may induce a further trial of this remedy,

I am, Sir, yours obediently,

Liverpool, May 10th, 1875. ARTHUR WIGLESWORTH, L.R.C.P.L., &c.

THE FAMILY OF THE LATE MR. THOMAS.

THE following additional subscription has been received on behalf of the above:—Mr. Henry G. Sadler, Canterbury, £1 1*s.*

Mr. W. Cory.—The law allows reasonable charges, and the charges specified are not unreasonable.

THE PATHOLOGY OF TRAUMATIC HEPATITIS.

THE liver affords a good field for the study of the intimate changes in parenchymatous inflammation, since its special tissue elements have such distinctive characteristics that it would seem comparatively easy to ascertain their relation to the inflammatory process. The subject has been studied by several observers, and recently by M. Uwersky, of Kiew, whose researches are published in the last number of Virchow's *Archiv*. He excited inflammation in the livers of dogs, rabbits, and frogs by inserting at the time splinters of wood or silk threads, the animals being under the influence of chloroform. The first question to be determined was, How do the liver-cells comport themselves in the inflammatory process? All observers agree that at first they are to be found arranged around the foreign body in concentric layers, probably as a mechanical effect of the pressure to which they are exposed, and that they soon become cloudy and more granular. Holm and Hüttenbrenner assert that they subsequently clear, elongate into a fusiform shape, and are transformed into the fibre-cells which form part of the ultimate cicatrix. Uwersky, however, could detect no such change. According to him, the granular appearance increases till the cell becomes full of fat, which distends it more and more, concealing the nucleus, and ending in the destruction of the cell and the escape of its degenerated contents. Pus-like cells are found in all cases in the neighbourhood of the foreign body a few days after its introduction; but when an irritant, as ammonia, is applied, rapid suppuration occurs. It is difficult to obtain direct evidence of the source of the pus-corpuscles. No division of the nuclei of the liver-cells could be discovered, and other facts make it probable that the pus-cells derived from the vessels are really white blood-corpuscles. Pus-like cells were found in the neighbourhood of a wound six hours after its infliction; and when vermilion had previously been injected into the blood, these cells were found to contain it, just as did the pale blood-corpuscles within the vessels. After a few days fragments of liver-cells and fat-drops were found in the pus; but there was no evidence of any transformation of the liver-cells themselves into pus-corpuscles. The possible partial origin of the pus in the connective tissue was less easy to decide. The presence of vermilion in the cells six hours after its injection, when no trace of it could be found in the interstitial connective tissue, renders it doubtful, and the absence of any indication of any cell multiplication in the interstitial connective tissue makes its participation in the formation of the pus-cells additionally improbable. It was also difficult to ascertain the source of the connective tissue which remained in the wound, and seemed to proceed from nucleated, spindle-shaped cells, which were found a few days after the injury had been inflicted. No indication could be seen of their origin from the liver-cells as described by Holm, and the only obvious source for them was the colourless corpuscles, although the precise transformation could not be detected.

A Modern De Quincey.—We shall be glad to receive it.

PUERPERAL FEVER.

To the Editor of THE LANCET.

SIR,—I quite agree with Dr. Richardson that "P. M." was going a little too far in averring, "without the slightest hesitation, that he carried the poison to the patient."

Not long ago I had a case almost the same as that which Dr. Richardson relates. I was attending several cases of scarlatina in a small court, in which at the time I attended a case of labour. Now, to make matters as bad as could be prospectively, my midwifery patient's two children were suffering from scarlet fever—one so malignantly that it died soon after its mother's accouchement; yet, in the face of all these severe febrile complications, and a very small room, my midwifery case progressed from first to last without the slightest bad symptom. I confess that previous to her confinement I was somewhat in a dilemma as to what to do, because the poor woman had not any neighbour to nurse her children, whilst she perhaps might get away from the affected place; therefore I determined to "make the best of a bad job."

I may also add that I have now attended about *six hundred* cases of midwifery, and at the same time all kinds of fevers and diseases, such as a general practitioner must of necessity mix more or less together; yet it is nevertheless a fact that I have *never lost one mother from any cause whatever* connected with her confinement! Probably there is a deal of "good luck" in the above; still, "facts are stubborn things"! Yours truly,

Trinity-square, S.E., May 11th, 1875. F. G. L.

To the Editor of THE LANCET.

SIR,—Will you allow me to state the following facts for the consideration of those gentlemen who are interested in the discussion on puerperal fever?

A surgeon in this neighbourhood attended a lady in her confinement. When sent for he was in the act of using the lancet to his own child, who was suffering from a severe form of erysipelas. The summons was immediately responded to, and in due course he delivered the woman. She died in less than a week from puerperal fever. Her sister, who had been confined *four weeks* previously, and had apparently attained to her usual state of robust health, came over to assist in the nursing. In a few days she was seized with symptoms of fever, and in less than a fortnight died under similar circumstances to those of her sister.

This is the only case in my experience in which puerperal fever has been contracted after so long an interval from confinement, and indicates a susceptibility to the disease which is far from usual.

I remain, Sir, yours truly,

May, 1875. A. B.

Protector.—We have not the pleasure of knowing the "Great Rheumatic Doctor." Her powers, if we may take her own description of them, are wonderful.

THE letter of *Mr. Charles J. Cullingworth* on "Post-mortem Examinations" must stand over till next week.

THE PRESERVATION OF MEDICINES.

A FLASK for the conveyance of ethers and other volatile fluids has recently been invented by Dr. Lilburne, Fleet Surgeon R.N., by which their preservation is effected without the occurrence of any evaporation. It consists of a glass bottle, corked, and afterwards, we suppose, hermetically sealed by fusing and closing the top of the neck. When required for use, the temperature is to be reduced to 65° F. by iced-water or freezing mixture, and a scratch made round the neck below the cork, when the tube (or rather neck) can be removed by a smart tap, and the fluid decanted into the dispensing bottle. If efficient, this is an ingenious and simple contrivance for all "service" officers, and those who practise in the tropics know that all volatile medicines quickly lose, under ordinary circumstances, a large proportion of strength. These bottles have been sent for trial to Ascension, Hong-Kong, Jamaica, and Zanzibar, and, in consequence of the resulting favourable reports, the Army and Navy Medical Departments have adopted them. It appears to us, however, that some means should be taken to secure the elongated neck of the bottle from injury, as in its present form it is liable to be broken in transit.

Information.—1. Parkes's Practical Hygiene.—2. Dr. Roberts's work or Austin Flint's Practice of Medicine.—3. Dr. Sibson's work.—4. Meadows's Midwifery.—5. Grailly Hewitt on Diseases of Women.—6. Garrod's Materia Medica.—7. Roscoe, Bloxam, or Ralfe.

MALARIAL YELLOW FEVER.

To the Editor of THE LANCET.

SIR,—I have read with much interest in THE LANCET of Jan. 16th your report of the discussion elicited at the last meeting of the Royal Medical and Chirurgical Society by the reading of Dr. Hayne's paper on the Epidemic of Malarial Yellow Fever with which he had to contend on board the *Doris*, off Port Royal, Jamaica, in 1874. The subject is one to which I have had occasion recently to devote a considerable share of attention, and I will be glad could you spare me a corner in your valuable journal for a few remarks on it.

Of 10,230 patients treated in the Estate's gaol and police hospitals under my superintendence on the Arouabisce Coast, Essequebo, in 1874, 4600 were cases of malarial fever. Of these, I find on reference to the hospital case-books and registers, 3764 were cases of intermittent fever, and 846 of remittent fever. Of the latter, some 30 treated in hospital in the months of August and September were of the malarial yellow fever type; 11 were in particular very severe—hot fever, racking headache, bloody or deeply coloured bilious vomiting, a foul loaded tongue, occasional epistaxis, great epigastric tenderness, intense jaundice, and a marked tendency to delirium, coma, or convulsions, being conspicuous symptoms of the disease. The invasion was usually sudden. Men suffered more than women; new-comers than old residents. Of the 11 treated in hospital, to whose cases I have particularly alluded, not one had yet completed the two years' residence which is usually looked upon here as the ordinary period of acclimatisation. The disease, however, although perhaps most common amongst the recently-arrived coolies, was by no means confined to them. In private practice I met numerous cases in the villages along the coast amongst the creoles, the Portuguese, and the non-acclimatised Barbadian negroes. The latter, indeed, almost invariably fared worst; the virulence of the poison, about the middle of the autumn, frequently giving rise amongst them *at the very outset* to the most alarming prostration, uncontrollable vomiting, intense jaundice, delirium, coma or convulsions, and in many cases speedily terminating the patient's existence. Whether the want of attendance, careless habits, and grossly insanitary conditions under which this class of labourers usually live, may not have rendered them in a particularly unhealthy season peculiarly obnoxious to the disease is a matter for further investigation. As to the fact there can be no doubt. In several instances I found the thermometer in the axilla indicate from 106° to 107° at each visit for three or four days. Epistaxis was a common symptom, and I thought frequently relieved headache. Hæmaturia occurred more rarely, but in a considerable proportion of cases. Bloody vomiting was still more rare. Hepatic, splenic, and pulmonary congestion had to be always closely watched for. Latent pneumonia was a not infrequent cause of death. Of the several cases in which I tested the urine for albumen, I recollect having found distinct traces of it in five. According to the ordinarily accepted theory, this, in conjunction with the other symptoms, should prove the case to be one of "specific" or "contagious" yellow fever. But this I am by no means prepared to admit; the localities in which the disease was most common, the surrounding conditions, the temporary existence of bad drainage in consequence of the formation of a large mud-bank along a considerable part of the coast, but, above all, the great prevalence of intermittent and remittent fevers, and the slow gradation by which these, ordinarily mild, became virulent, all contraindicate such a conclusion. Besides, most observers in Demerara, who have seen and diligently noted the chief points in several undoubted epidemics of yellow fever, altogether deny its capability of being propagated by contagion, and Inspector-General Lawson's remarks at the Royal Medical and Chirurgical Society's meeting as to the result of the inquiry made by him into the question in the West Indies some years ago go far to confirm the truth of the general impression. In any case, I fear, the distinction between "malarial" and "specific" yellow fever, dependent on the presence or absence of albumen in the urine, is not absolutely trustworthy; and as partial suppression is by no means an exceedingly rare complication even in cases of bilious remittent fever, much dependence cannot be placed on it.

The treatment adopted was usually that so eloquently advocated by Prof. M'Lean in connexion with remittent fever, and the efficacy of quinine was in most instances beyond cavil.

I may mention, before concluding my letter, that the average daily temperature at noon for the months of July, August, September, October, November, and December respectively was as nearly as possible 80°, 85°, 87°, 81°, 85°, and 84° F.; while the rainfall for the same period was 7·45, 5·28, ·14, 2·43, 11·24, and 13·84 inches. July, August, and September are usually considered the most unhealthy months here, and in those months alone in 1874 about one-third of the total number of intermittent and remittent fever cases treated during the year came under observation.

I am, Sir, yours faithfully,

Essequebo, March 6th, 1875. ALEX. GORDON, M.B., C.M.

HOW SMALL-POX IS PROPAGATED.

WE find from a late report of Dr. Goldie, medical officer of health for Leeds, that small-pox is again prevalent in that town. The following statement offers a good illustration of the insidious nature of the disease, and of the way in which it may be disseminated and carried to distant localities. Prior to the disease breaking out in one household, a nurse had been obtained from Southampton for some of the young children. It was not known to whom she was related, or from what particular part of Southampton she came. On investigation it was found out that her mother was the matron of a small-pox institution; it was also found out by the medical attendant that some hampers of clothing &c. had been sent from the girl's relations. Without this chain of connexion it would have been difficult to have accounted for the infection of the family. The history of the other importation of small-pox from another infected centre—viz., Keighley—runs thus: On April 29th a servant maid, named Taylor, feeling poorly, desired her master and mistress to allow her to go home to her parents in Leeds, which they agreed to do. She returned to Leeds on that day, when the sickness she had previously complained of soon showed itself to be the premonitory symptoms of small-pox. She was removed to the Small-pox Hospital, where she has since died. With a view to make an authoritative stand against any further importation from Keighley district, Dr. Goldie visited that town on Thursday, May 6th. He at once put himself in communication with the sanitary authorities there, and they granted every assistance in their power to find out whether this girl had been sent over the country by railway train, knowing at the time that she had small-pox, or knowing that she had been in direct contact with small-pox poison. It was found from her late master, who is a landlord in a beerhouse, that no case of small-pox was in the house at the time of her leaving; but small-pox was in the house at the time of Dr. Goldie's visit, and no means were adopted by which the spread of the disease might have been stopped.

A Subscriber for the last Seven Years.—YES.

MARRIAGES OF CONSANGUINITY.

To the Editor of THE LANCET.

SIR,—In connexion with a letter under the above heading in your issue of May 8th, I should be much obliged if you would allow me to lay a similar case before your readers for the expression of their opinion.

The parties concerned are first cousins, aged respectively thirty-five and twenty-nine; the parents of both are also first cousins, and in the previous generation the same relationship occurred on both sides. They are in comfortable circumstances, and have enjoyed all their lives fairly good health, but they are of short stature. There is no hereditary predisposition to tubercular or other disease, nor has there been any mental weakness or aberration in either family; but the mother of the woman has suffered much during a great part of her life from general debility, but not phthisis.

To what extent, if any, are the following likely to affect the results?

1. Age and height.
2. The principle of atavism.
3. The fear, in the woman, of evil consequences.

In any accounts of cases that I have come across I have never found that the woman, as well as the offspring, was injuriously affected. Is this always so? Those we look to as authorities seem much at variance on this subject, and I should be glad of any comments or information. It is a practical matter which seems worthy of more attention than it has hitherto received.

Yours obediently,

May 13th, 1875. A PHYSIOLOGIST.

T. B., (Greenwich.)—We believe a Home of the kind has been recently founded at Maida-vale, W., the intention of which is to provide for children suffering from incurable disease until they exceed the age prescribed as the limit by the kindred institutions for incurable adults. It has been calculated that the sum of 5*s.* will be required for each inmate of the Home.

ROYAL MEDICAL BENEVOLENT COLLEGE.

To the Editor of THE LANCET.

SIR,—Having noticed several letters which have recently appeared in THE LANCET concerning the present system of electing Foundation scholars at Epsom College, may I be allowed to suggest what I consider a fairer plan.

First. That an application be forwarded to the Council, stating precisely the reasons of the case, and signed by a certain number of governors (say three or six) who think it deserving. This application should be subject to the approval of the Council.

Secondly. That candidates should be admitted in order of application, according to the number of vacancies which occur.

Finally. On being elected, each boy should undergo a test examination, according to his age, as during my life at Epsom I noticed that the dullest boys were Foundationers, and only one head prefect (1865) was a free scholar during a period of eight years; and I am afraid that parents or guardians are but too apt to abuse the charity by sending the dullest child, in order to dispose of him for a certain number of years.

I hope you will excuse these boyish remarks; but as I hope in my time to be an active supporter of my old school, I thought I would try to save many a poor widow much labour, stamp money, and anxiety while the subject is before the profession. I am, Sir, yours &c.,

May, 1875. AN OLD FOUNDATION SCHOLAR.

A Twenty-five Years' Reader, &c.—If our correspondent will apply to his medical attendant, we have no doubt he will gain all the information he requires.

DURATION OF PREGNANCY.

To the Editor of THE LANCET.

SIR,—I should feel obliged if you or your readers will supply me with an account of the longest cases of pregnancy they know of. I have been asked if it be possible for a woman to carry her child eleven months?

I remain yours truly,

Sunderland, May, 1875. THOS. F. HOPGOOD.

UNDERTAKERS AND DOCTORS.

A CORRESPONDENT kindly encloses us one of the most remarkable communications which it has been our lot to witness. It consists of a letter from a firm of undertakers, handing a cheque for £2 14*s.*, being five per cent. commission on Mrs. ——'s and Mrs. ——'s funeral, less disbursements, and thanking our correspondent for the recommendation! He wishes to know what to do with the bribe. He will, doubtless, ere this have returned it with a letter of indignant remonstrance to the thriving undertakers, who can afford out of their profits thus to insult a respectable practitioner. The great end of doctors is to keep people out of the hands of undertakers, and when at last their efforts fail they approve of unpretentious funerals, which do not allow of such an offensive system of bribes as that we are now condemning.

TREATMENT OF FRACTURES.

To the Editor of THE LANCET.

SIR,—In your impression of Feb. 13th, Dr. Thomas Browne, R.N., publishes "Remarks on Fractured Femur." Two years and a half ago I had the misfortune to suffer from compound comminuted fracture of the right leg into the ankle-joint. Three weeks afterwards my wife was thrown from a sleigh, and received fracture of the left cervix femoris. It was put up by my medical *confrères* with the long splint and perineal band. Eight weeks after her injury I was able to get upstairs to see her, and found the leg about three inches short. I immediately had the foot-board of the bed cut off. I then stood the hind feet on three bricks; put a strip of plaster up each side of the leg to above the knee, leaving a stirrup at the sole; secured this by circular strips; tied a cord to the stirrup, passed it over a piece of board with a groove screwed into the bed-frame, and attached a clock weight, weighing about 10 lb. This I continued for nine weeks, at the end of which time she was allowed up, and used crutches for some time. There is no shortening whatever, and she is able to walk and dance as well as ever.

In my own case there is very fair motion of the joint, but about three-quarters of an inch shortening at the heel. This is barely perceptible with the boot on. I am, Sir, yours &c.,

GEO. E. GASCOIGNE, M.D.,

Brockville, Ontario, Canada, April 15th, 1875. Late Royal Artillery.

D. A. B.—The sum is not too much to a physician in consultation. For numerous visits in the way of a general practitioner, it might or might not be reasonable. Everything depends upon circumstances. The fees in such cases should be arranged beforehand. As regards the matter contained in the letter marked "private," our correspondent labours under a misapprehension. By no "right or custom" can the use of the designation be justified.

PECULIAR OBSTETRIC PRACTICE.

To the Editor of THE LANCET.

SIR,—In reference to the peculiar mode of delivery adopted, according to your correspondent, "R. N.," by the Irish in Glasgow, I wish to state that it is not "a common Irish custom"; except, perhaps, in the extreme north of Ireland, patients are delivered "in the usual obstetric position." Why the Glasgow Irish have adopted a bad habit I do not know, except it be the force of example. After describing the position, "R. N." says, "In this case the accoucheur manipulates from behind." I presume that "R. N." in his practice is not in the habit of manipulating *à priori*.

Yours truly,

Dublin, May 15th, 1875. J. R. O.

Dr. T. W. H., (Glossop-road, Sheffield.)—A notice of the book was written some time ago, but its appearance has been delayed owing to the pressure on our columns.

SPASM OF THE JAW.

To the Editor of THE LANCET.

SIR,—I should be obliged if some of your readers would tell me what to do for the following case. I have tried everything I can think of both internally and externally.

Mrs. J——, aged thirty-five, with large family, suffers from a spasmodic affection of the lower jaw. It will, without any warning whatever, become fixed, so that with all my strength I could not open it. The husband is the only one who can do so, and I have seen him perspire before he succeeded. I know of nothing to cause it, neither have I ever heard of such a case.

Yours &c.,

May 10th, 1875. S.

"GETTING ON."

(From the Derbyshire Times.)

"MANSFIELD. — IMPORTANT DISCOVERY BY DR. J. WARING CURRAN, F.R.C.S.—In a number of the *Pacific Medical and Surgical Journal* received by us in the ordinary way, we find a paper by Dr. J. Waring Curran, F.R.C.S. (Mansfield), quoted from the *Medical Press and Circular*. It says: 'Dr. J. Waring Curran is confirmed in the belief that the *iodide of ammonia* is more potent in therapeutics than the *iodide of potassium*.' Dr. Curran's numerous friends will be glad to perceive that his name is not unknown nor unhonoured not only on this but on the other side of the Atlantic."

Testimonials.

"GENUINE HERB BEER.—Being conversant with the method of preparing the well-known Herb Beer of Mr. Smith, and intimately acquainted with the nature of the vegetable ingredients of which it is composed, I have no difficulty in pronouncing Smith's Herb Beer a non-stimulating and refreshing beverage, possessing tonic properties.

"(Signed) J. WARING CURRAN,
"L.K. & Q.C.P.I., L.R.C.S.I.
"Ex-Demonstrator of Anatomy, Richmond Hospital School of Surgery.
"Mansfield Woodhouse, August 23rd, 1873."

"Being acquainted with the precise formula of 'Wharmby's Gripe Water,' I consider it a most excellent and safe prescription for children suffering from colic and the effects of teething.

"(Signed) J. WARING CURRAN,
"L.K. & Q.C.P.I., M.R.C.S.,
"Surgeon Mansfield Woodhouse Hospital, and Medical Officer of Health."

QUACKS AND CERTIFICATES OF DEATH.

To the Editor of THE LANCET.

SIR,—On May 3rd I was called in, whilst on a round, to a child, aged about one year, whom I found comatose and apparently moribund. On questioning the parents, they told me that the patient had been ill since April 29th; that they had called in a herb doctor on May 2nd, who said it was a case of diphtheria, and that he could do it good. He visited the patient the following day, when, seeing the state of affairs, he told them that he had done all he could, and that they were "at liberty" to call in any medical man they wished. The child died within four hours of my seeing it. At night the father came for the usual certificate, at which time I happened to be at a labour. He came the next morning, when it appeared that, after calling upon me the night before, he had gone to the "quack," who gave him a certificate (and who had told them during his attendance that he *could* give one), of which the enclosed is an exact copy. The father took it to the registrar, who told him that he would prefer a certificate from a qualified practitioner; but if one could not be obtained he would be obliged to accept the herbalist's. I declined to give one. Having since heard nothing of the case, I conclude that the registrar accepted it.

If "quacks" can practise and grant certificates of death, I should like to know the benefit derived in general practice from paying the registration fee.

I am, Sir, your obedient servant,

Huddersfield, May 6th, 1875. JUSTITIA.

P.S.—The "Dr. Holmes" mentioned in the certificate is a man, I presume, who keeps a shop in the town, and who styles himself "Medical Botanist."

[COPY.]

"Startha, Mold Green, May 3rd, 1875.

"This is to certify that Mary Binns, Residing at Primrose Hill, in Almondbury, Died this day, May 3rd, 1875, aged 1 year and 2 months. Cause of death Croupal Diphtheria. Last seen by me this day, May 3rd, 1875. Yours,

"JOSHUA BROOK, Medical Botanist,
"Late Assistant to Dr. Holmes."

A CORRECTION.

To the Editor of THE LANCET.

SIR,—I beg to point out a slight mistake in last Saturday's LANCET. In the obituary notice of the late Mr. Benjamin Walker, it is stated that he received the diploma of the College of Surgeons on May 3rd, 1875, whereas he qualified in 1837. Your obedient servant,

Denmark-hill, E., May 16th, 1875. GEO. BAKER.

COMMUNICATIONS not noticed in the current number will receive attention in our issue of the ensuing week.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. G. Johnson, London; Mr. H. Lee, London; Sir Geo. Baker, London; Dr. Coupland; Mr. Hutchinson, London; Dr. B. W. Richardson, London; Lord Browne, London; Mr. Jabez Hogg, London; Dr. Curran, India; Mr. Fergusson, Peebles; Mr. Hamill, Oldham; Mr. Swallow, London; Mr. Holloway, London; Mr. Wilkins; Dr. Fishbourne; Mr. Cullingworth, Manchester; Mr. O'Brien, London; Dr. Cory, Boulogne; Dr. Heywood Smith, London; Mr. Sim, Nottingham; Mr. Meymott, Ludlow; Mr. Oerton, Walsall; Dr. Bakewell, Dunedin, New Zealand; Mr. Oliver, Dublin; Mr. A. Butt, London; Dr. Swift Walker, Hanley; Mr. Edgill, Manchester; Mr. Lane, London; Dr. Bartley, Halifax; Dr. Buchanan, Glasgow; Mr. R. Holmes, Coagh; Dr. Broadbent, London; Mr. Deschamps, London; Mr. Horder, Wood Green; Mr. Hopgood, Sunderland; Mr. Robinson, Glenalmond; Mr. Nairne, Glasgow; Mr. Gibbs, Watford; Miss Nicol, Tigh-na-brunich; Mr. Cooper, London; Mr. Denton, Leicester; Dr. Waller, Peterborough; Dr. Atthill, Waterbeck; Mr. Dobie, Paisley; Mr. Stilliard, Birmingham; Mr. Hughes, Dinas Mawddwy; Mr. Reid, Stafford; Mr. Ingpen, London; Mr. Pearse, Wisbeach; Mr. Dixon, Leicester; Mr. Whittaker, Southampton; Mr. Jonson, London; Mr. Denny, Farnborough; Mr. Foster, London; Mr. Kilburn, West Auckland; Messrs. Debenham and Tewson, London; Mr. Osborne, Lindville; Mr. Willan, South Shields; Dr. Meyer, London; Mr. Barnes, Carlisle; Mr. Coates, London; Mr. Walker, Manchester; Messrs. Hogg and Co., London; Mr. Ayres, London; Inquirer; A Subscriber; A Modern De Quincey; Medicus; M.R.C.S.; Radius; S. W.; J. H., Bekeary, India; D. M.; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Williams, Accrington; Mr. White, London; Mr. Reilly, New Cross; Mr. Smyth, Bethnal Green; Mr. Tennant, Fence Houses; Mr. Prestwich, Oldham; Mr. Long, Doncaster; Mr. Freeman, Rippingale; Mr. Scott, Westray; Mr. Godfrey, London; Mr. Rose, London; Mr. Barraclough, Dulwich; Dr. Coleman, Armley; Mr. Tothill, Cuckfield; Dr. M'Naughtan, Blackpool; Mr. Booth, Oswaldtwistle; Mr. Larken, London; Mr. Goode, London; Dr. De Wolfe, Wotton-under-Edge; Mr. West, Liskeard; Dr. Rayfield, Jefferson, U.S.A.; Dr. Rowland, Malvern Wells; Mr. Kebbell, Hastings; Mr. Cripps, Malmesbury; Mr. Davis, Mountain Ash; Dr. Clarke, Preston; Messrs. Goodall and Co., Leeds; Mr. Whitton, Towcester; Mr. Tillotson, Loughborough; Mr. Hesslegrave, Marsden; Mr. Rowland, Waterloo; Mr. Richardson, Bryngwy; Mr. Taylor, Stockton; Mr. Stoney, Millom; Dr. Smith, Burton; Miss Hunter, Cheadle; Mr. Osmond, Colchester; Mr. Morgan, Lichfield; Mr. Pife, Norwich; Dr. Newman, St. Martin's; Dr. Dobie, Chester; Mr. Gregg, Leominster; Mr. Carie, Dovercourt; Messrs. Grace, Bristol; Mr. Smith, Chester; Mr. Shalles, Greenwich; Dr. Walters, Reigate; Mr. Gosling, Biddulph; Mr. Torbock, Polruan; Mr. Buller, South Brent; A. B., Stoke; Epsilon; Beta, Harrogate.

Liverpool Daily Post, Surrey Advertiser, Metropolitan, Daily Chronicle, East London Observer, Isle of Man Times, Birmingham Morning News, Huddersfield Chronicle, Cork Constitution, Sunderland Daily Echo, Melbourne Argus, Dunfermline Saturday Press, Brighton Guardian, and *Daily Mail* have been received.

METEOROLOGICAL READINGS

(*Taken by Steward's Instruments*).

THE LANCET OFFICE, MAY 20TH, 1875.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia. in Vacuo	Max. Temp. Shade	Min. Temp.	Rain-fall.	Remarks at 8 A.M.
May 14	30·28	N.E.	55	62	109	79	50	...	Overcast
" 15	30·17	W.	59	65	115	84	58	...	Raining
" 16	30·25	E.	54	60	102	72	55	...	Cloudy
" 17	30·11	S.E.	40	53	104	62	45	...	Cloudy
" 18	29·60	W.	53	59	101	69	51	...	Cloudy
" 19	29·60	W.	45	51	105	62	46	...	Cloudy
" 20	29·77	S.W.	49	53	...	...	45	...	Overcast

Medical Diary for the ensuing Week.

Monday, May 24.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

Tuesday, May 25.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
ROYAL INSTITUTION.—3 P.M.—Prof. Gladstone, "On Chemical Force."
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8½ P.M. Mr. John Gay, "On the Treatment of Nasal Lupus by Excision."—Dr. R. M'Donnell, "On a Case of Double Facial Palsy."—Mr. Lawson Tait, "On a Case of Congenital Deficiency of the Peritoneum, resulting in Intestinal Obstruction, and simulating an Abdominal Tumour."—Mr. E. Owen, "On (so called) Dislocation of the Humerus."

Wednesday, May 26.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1½ P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

Thursday, May 27.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
ROYAL INSTITUTION.—3 P.M. Prof. Dewar, "On the Progress of Physico-Chemical Inquiry."

Friday, May 28.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—8 P.M. Evening Meeting.—9 P.M. Colonel Lane Fox, "On the Evolution of Culture."
QUEKETT MICROSCOPICAL CLUB.—8 P.M.—Mr. Hawkins Johnson, "On the Organic Structure of Flint and of Meerschaum."
CLINICAL SOCIETY OF LONDON.—8½ P.M.—Mr. Barwell, "On Hypertrophy of Lower Half of Face."—Mr. C. F. Maunder, "On a Case of Double Fistula in Ano: one treated by the Knife, the other by Elastic Ligature."—Mr. J. W. Hulke: "Arterio-venous Aneurism in Thigh from a Pistol-shot."—Dr. Southey, "On Acute Pemphigus."

Saturday, May 29.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Prof. Douglas, "On the Chinese Language and Literature."

NOTICE.

In consequence of THE LANCET being frequently detained by the Post Office when posted for places abroad *more than eight days after* publication, subscribers and others are reminded that such copies can only be forwarded as book packets, and *prepaid* as such.

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